

# Impact of COVID-19 on production and trade direction of high value 'niche' crop products in small island countries: A case study of Fiji




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PRESENTED BY

**NANDAKUMAR M. DESAI, MA KADER, S LAMETA, V NAIK, LT UBAUB  
AND IR CHAND**

THE UNIVERSITY OF THE SOUTH PACIFIC

# Introduction: Comparative Advantages Endowments - Fiji

South pacific Island Nation	Located midway between Equator & South pole
Climate	Tropical oceanic type
Foreign exchange earning sectors	<p>Tourism: 34% (2017) increased to 40% (2020)</p> <p>Agriculture: 38% (1963) decreased to 11.85% (2019)</p>
Natural resources with endowed geographic & climate	<p>❖ Fiji enjoying comfortable position for production of niche crop viz.;</p> <p>Ginger</p> <p>Papaya</p> <p>Kava etc.</p>   
Export destination	❖ Australia, New Zealand, US and Other countries (Germany, Japan, . Hawaii, Other PICs etc.)
Tourism status	<p>❖ COVID badly affected Fiji service sector</p> <p>❖ Under restrictive situation Fiji primary sector enjoying exporting of the niche crops</p>

# Under the COVID-19 Situation Primary Sector

- **Attracting the attention of policy makers:**

- ❑ For sustainable development in Agri. Export;
  - ❖ Needs to protect niche crop producers
  - ❖ Needs to create environment (Supply Chain)
  - ❖ Needs to place macroeconomic governance
- ❑ Study aiming to analyze the impact of COVID-19 on niche crop production and export potential under Fiji context

- **Objectives:**

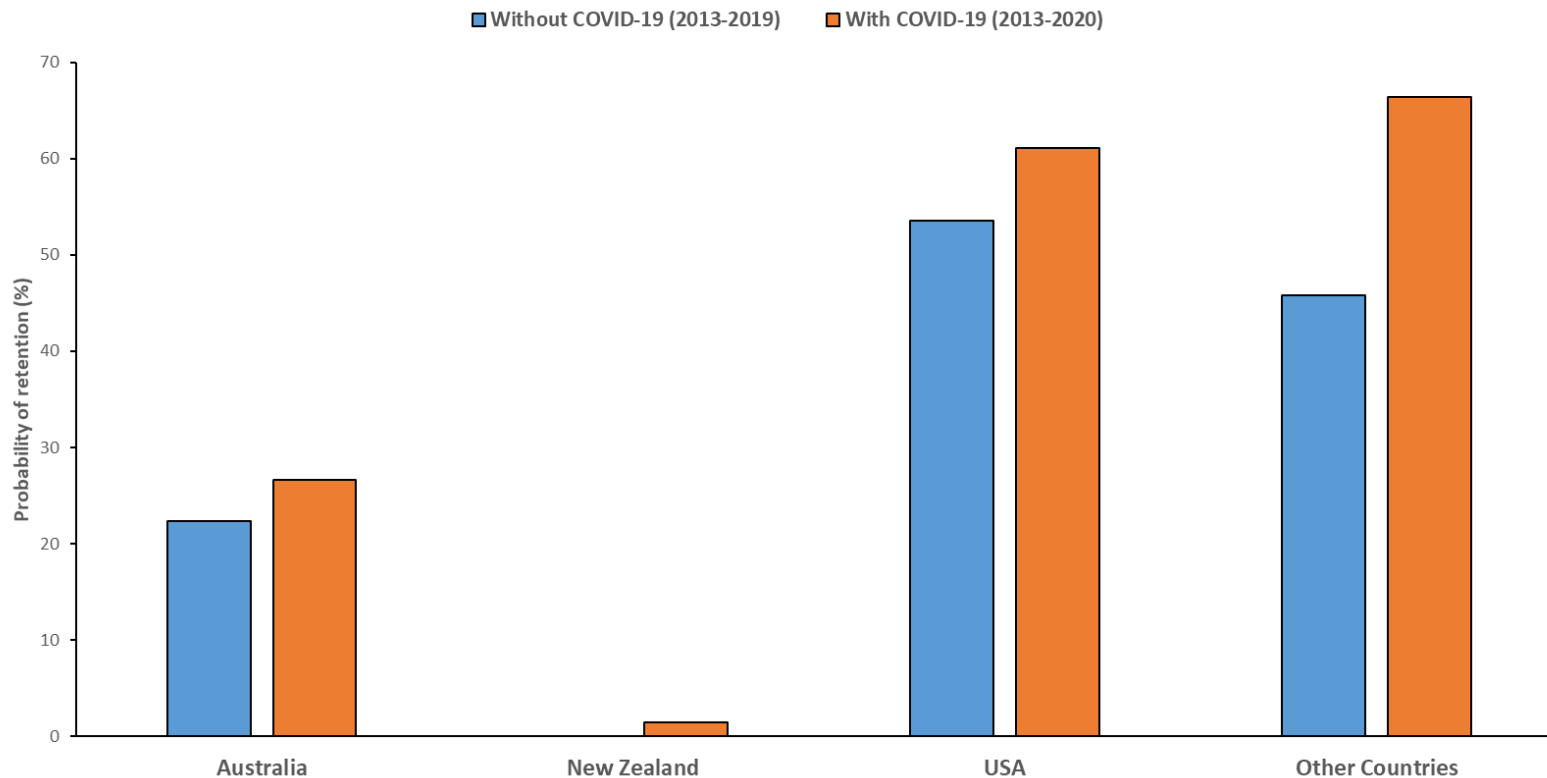
- ❑ Analyze destination wise niche crops imports retention without and with COVID-19 restriction
- ❑ Analyse the direction of export trade for identified niche crop products
- ❑ Analyse destination wise niche crops import quantities prediction
- ❑ Suggest appropriate policy measures

# Methodology

- Nature of data
  - ✓ Time series data (2013 to 2020)
- Source of data
  - ✓ Fiji Island Bureau of Statistics (FIBOS)
  - ✓ Fiji Agriculture Statistics Unit Economic Planning Statistics Division Min. of Agriculture
- Analytical tools
  - ✓ Markova chain analysis;
    - Estimates Transitional Probability (TP) Matrix 'P<sub>ij</sub>' switches from i<sup>th</sup> to j<sup>th</sup> country with passage of time
    - Diagonal 'P<sub>ij</sub>' measures export share retained and indicating loyalty of importing country
    - Algebraically model denoted as;  
$$E_{ij} = \sum_{i=1}^r E_{it-1} P_{ij} + e_{jt}$$

# Results and Discussions

- Impact of COVID-19 on Destination wise Ginger imports retention



- Other countries (Germany, Nederland etc.) observed stable importers of Fiji's Ginger and retained original share (66.42%)
- Followed by USA (61.07%) and Australia (26.64%)
- Fiji provided special investment inducements for export- oriented ventures

# Impact of COVID on the direction - Ginger export trade

TP Matrix without COVID-19 (2013-19)

Countries	Australia	New Zealand	USA	Others
Australia	0.2236	0.7764	0.0000	0.0000
New Zealand	0.0000	0.0000	0.5526	0.4474
USA	0.2687	0.0913	0.5356	0.1044
Others	0.0000	0.0000	0.5422	0.4578

T P Matrix with COVID-19 (2013-20)

Countries	Australia	New Zealand	USA	Others
Australia	0.2664	0.7336	0.0000	0.0000
New Zealand	0.0000	0.0143	0.6071	0.3786
USA	0.2691	0.1189	0.6107	0.0013
Others	0.0000	0.0000	0.3358	0.6642



(55.26%)

Others (54.22%)



(26.87%)



(9.13%)

Others (10.44%)

Others



(37.86%)

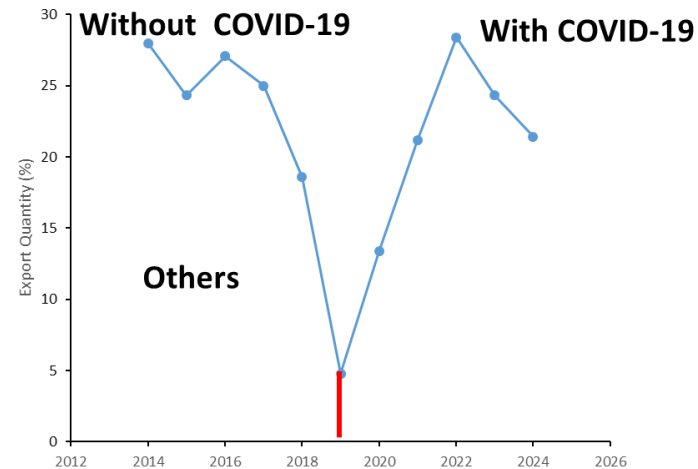
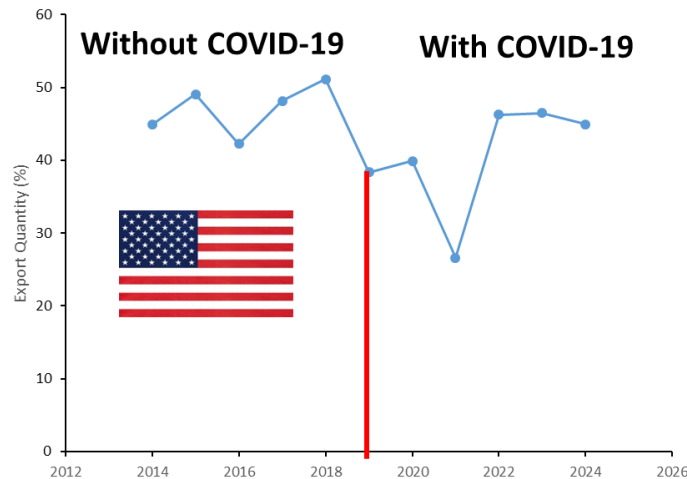
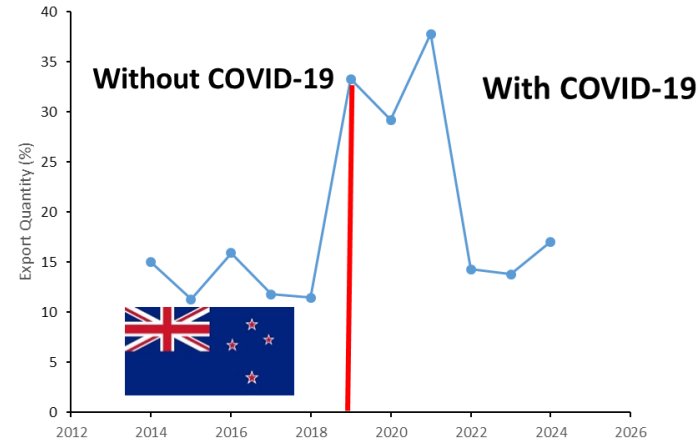
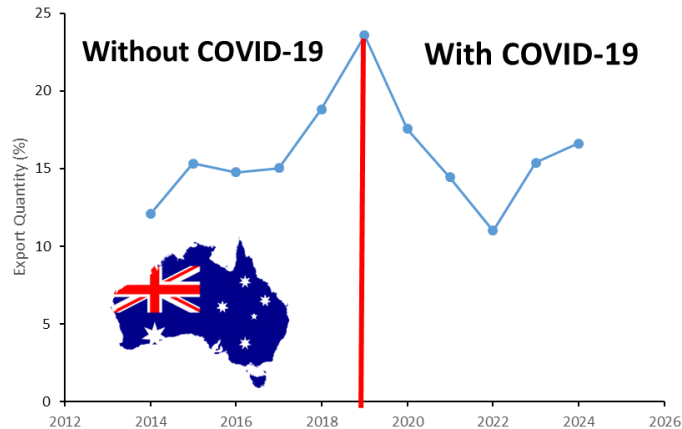


(60.71%)

Others (33.58%)

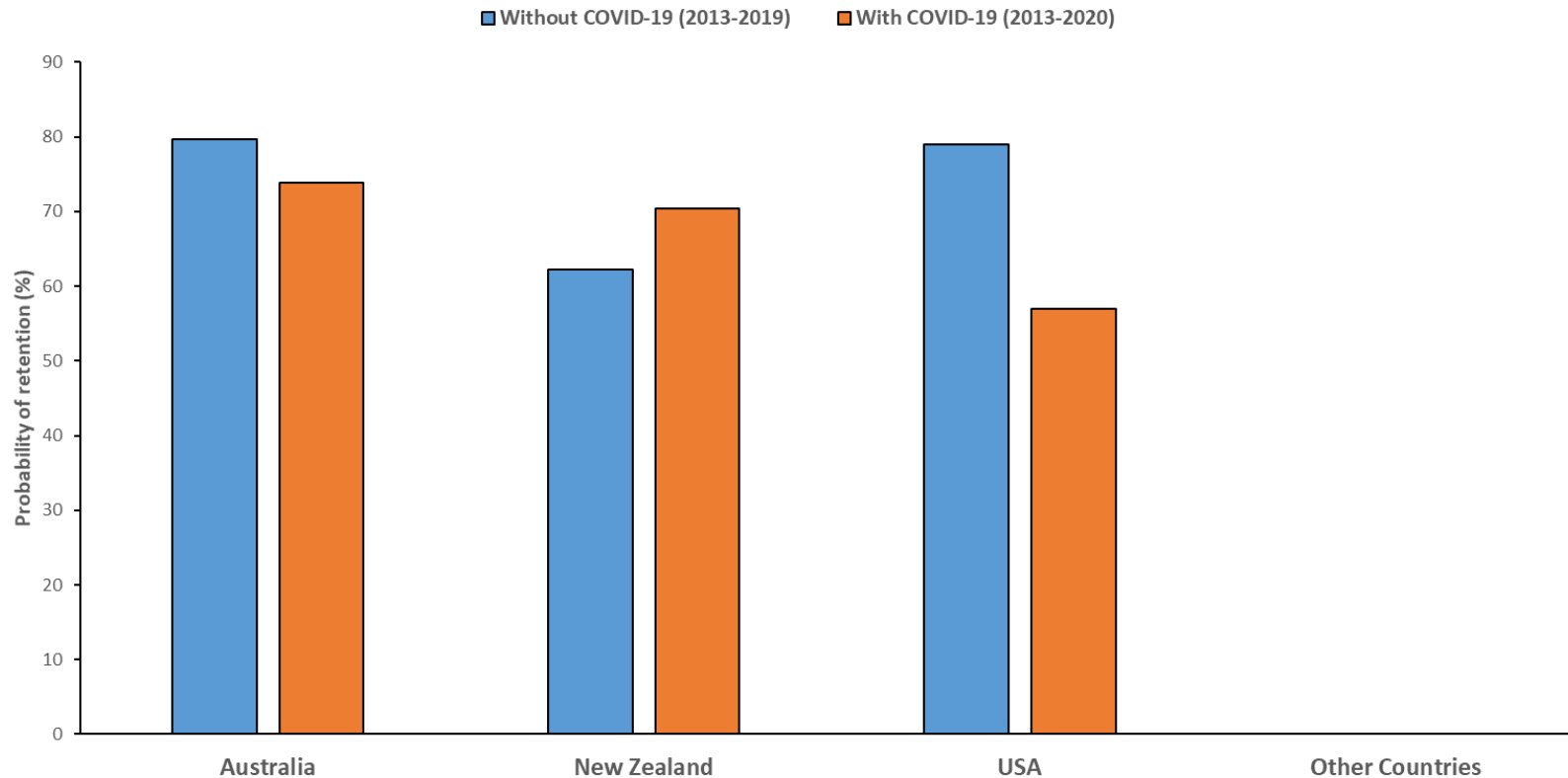
Fiji adapted American Spice Trade Association (ASTA) stipulations

# Ginger - Export Quantity Prediction



- **Potential Importers After 2021:**
  - ❖ Adaption of ASTA stipulations  
Preserved ginger export increase by 50.00%
  - ❖ Other countries (Germany, Netherlands) import increase by 21%
- **Reduction in Imports After 2021:**
  - ❖ Australia and New Zealand prefer to buy from (China)

# Impact of COVID on Destination wise Papaya imports retention



- Australia considered as stable importer of Fiji's Papaya (73.89%)
  - ❖ Australia's household consumption amounts more than 18%
- Second stable importer - New Zealand (70.42%)
- Third stable importer - USA (56.97%) prefers Var. Global Crown (Brazil)



# Impact of COVID on the direction - Papaya export trade

TP Matrix Without COVID-19 (2013- 2019)

Countries	Australia	New Zealand	USA	Others
Australia	0.7968	0.0000	0.0000	0.2032
New Zealand	0.3773	0.6227	0.0000	0.0000
USA	0.0000	0.0000	0.7895	0.2105
Others	0.0000	1.0000	0.0000	0.0000



(37.73%)

Others  
(100%)

- **Australia:**
  - ❖ Peak demand for papaya matches – Fiji Supply months June – August
  - ❖ Net Papaya Importer

T P Matrix With COVID-19 (2013-2020)

Countries	Australia	New Zealand	USA	Others
Australia	0.7389	0.2395	0.0000	0.0216
New Zealand	0.2958	0.7042	0.0000	0.0000
USA	0.0000	0.0000	0.5697	0.4303
Others	0.2431	0.0608	0.6960	0.0000



(29.58%)

Others (24.31%)

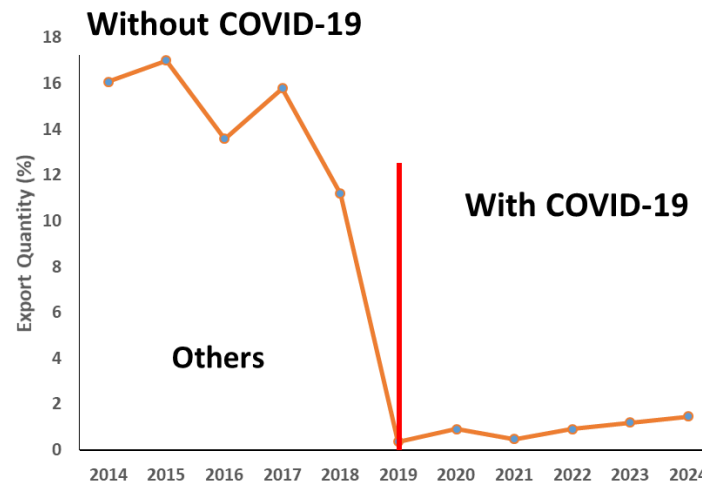
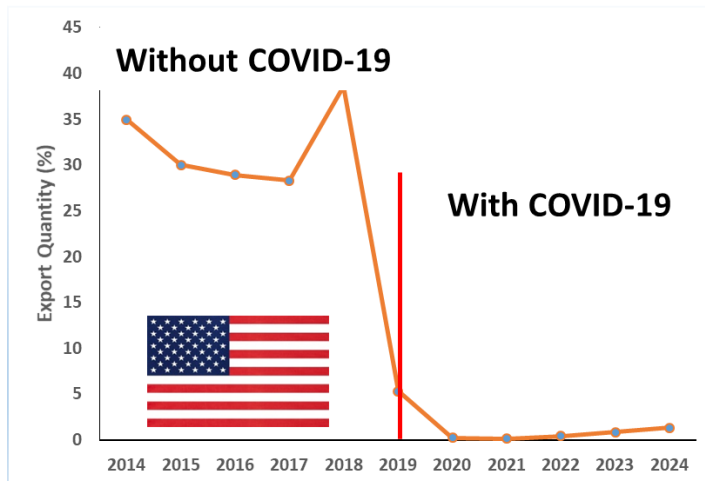
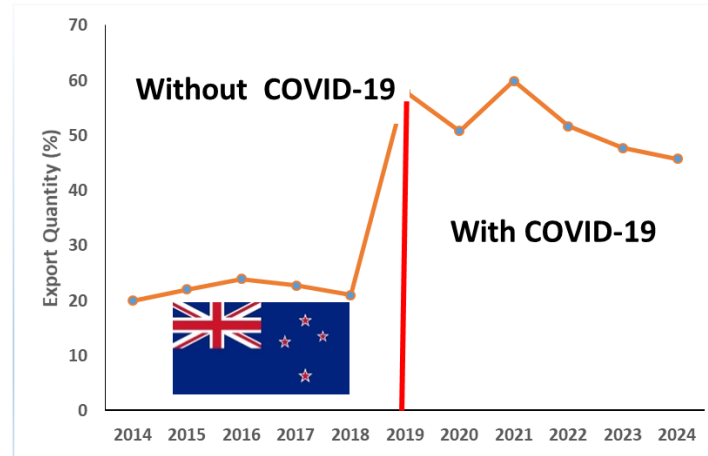
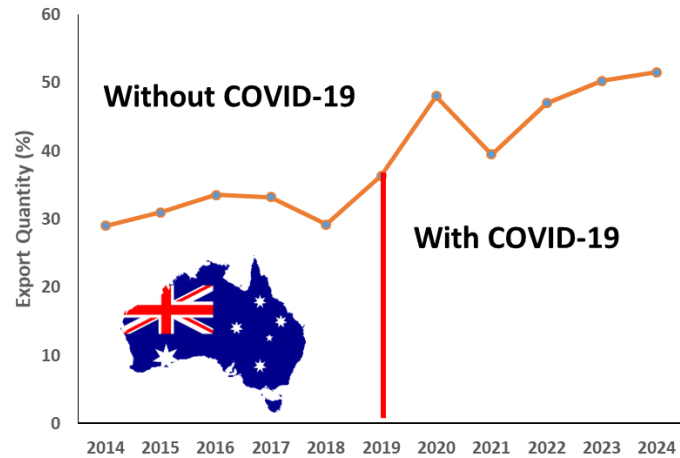


(23.95%)

Others (6.08%)

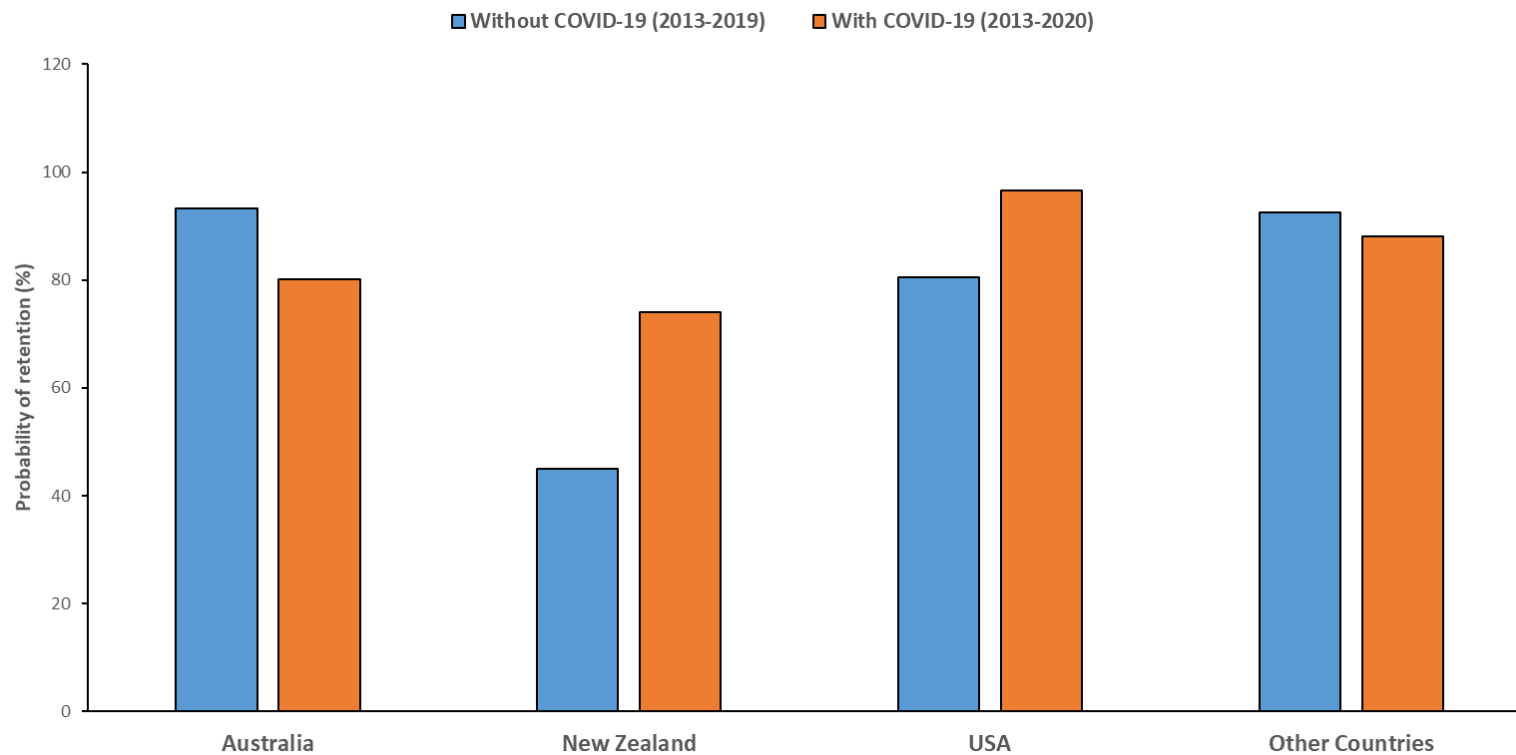
- **New Zealand:**
  - Retained share (70.42%) – Gained - Australia & Others

# Papaya – Export Quantity Prediction



- Australia:
  - ❖ Increased importation with COVID-19 situation & remain stable importer
  - ❖ Increase in Papaya popularity household consumption increase by 18%

# Impact of COVID-19 on Destination wise Kava imports retention

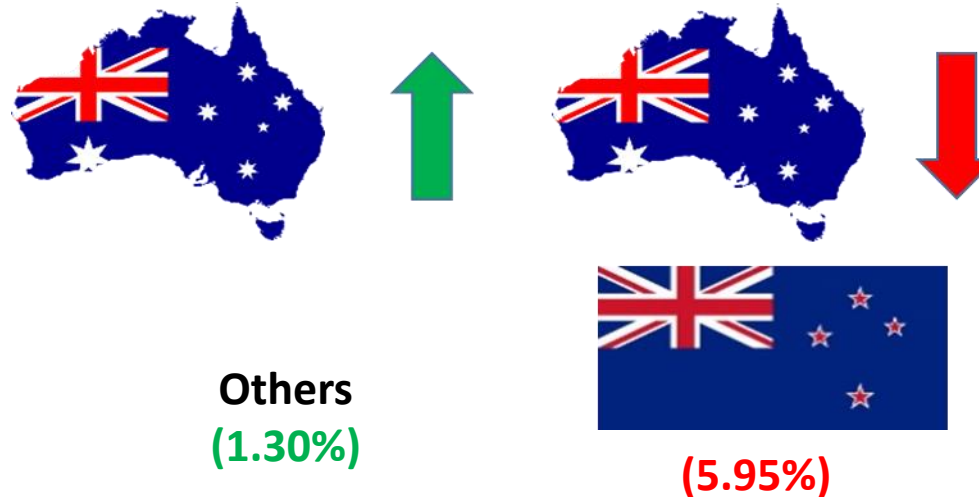


- Except for other countries & Australia import retention increased with COVID-19 situation
- **USA:**
  - ❖ Most stable import retainer (96.64%)
- **Australia:**
  - ❖ After COVID greatly reduced import retention (80.06%)

# Impact of COVID-19 on the direction – Kava export trade

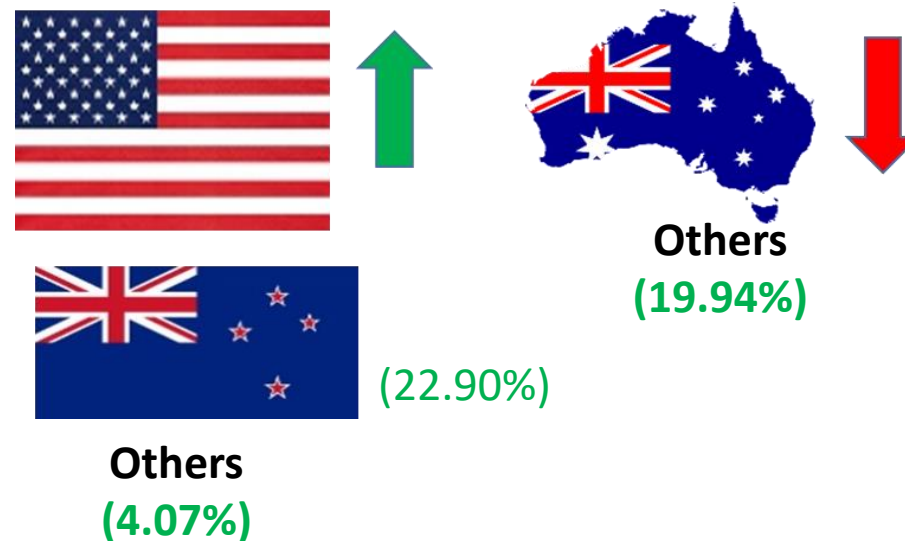
**TP Matrix Without COVID-19 (2013- 2019)**

Countries	Australia	New Zealand	USA	Others
Australia	0.9334	0.0592	0.0000	0.0074
New Zealand	0.0000	0.4499	0.5501	0.0000
USA	0.0000	0.1958	0.8042	0.0000
Others	0.0130	0.0500	0.0121	0.9248



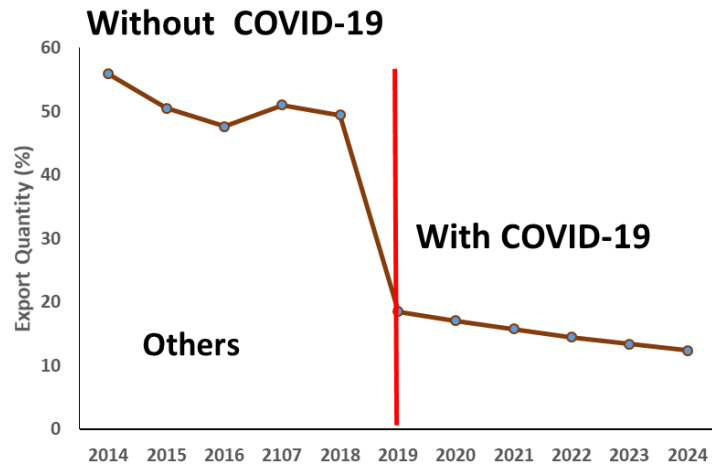
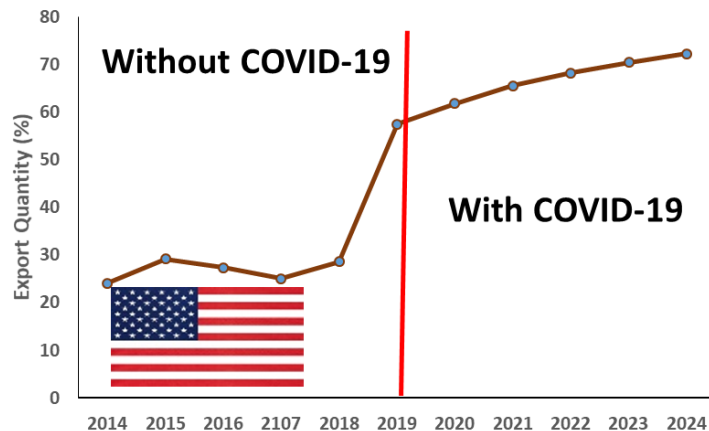
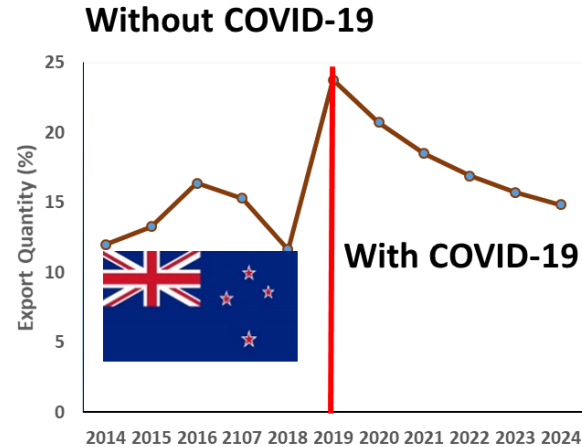
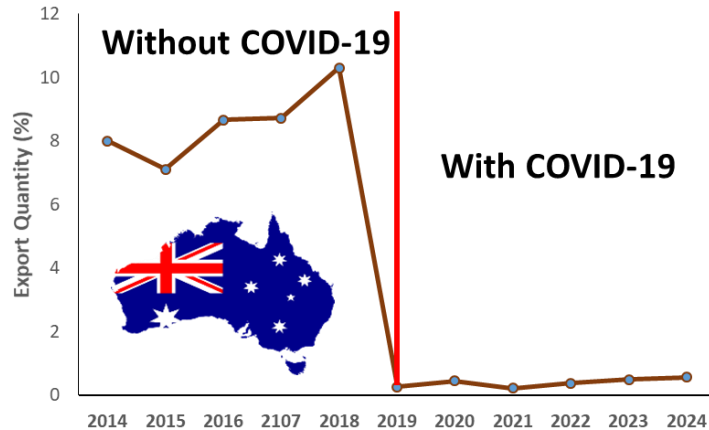
**T P Matrix With COVID-19 (2013-2020)**

Countries	Australia	New Zealand	USA	Others
Australia	0.8006	0.0000	0.0000	0.1994
New Zealand	0.0000	0.7395	0.2290	0.0315
USA	0.0000	0.0336	0.9664	0.0000
Others	0.0130	0.0645	0.0407	0.8818



- **USA:**
  - ❖ With COVID-19 situation emerged most stable importer (96.64%)
- **Australia:**
  - With COVID-19 situation lost to others

# Kava – Export Quantity Prediction



- People in USA consider Kava as solution for addressing general anxiety disorder (GAD)
- Australia restricting Kava import
- New Zealand reduced import and adjusted with importation from Tonga

# Conclusion

## **Ginger (With COVID-19):**

- ❖ Following ASTA USA predicted importation would sharply increase (2024)
- ❖ Similar trend as well observed with Others (Germany, Netherlands)
- ❖ With China's stiff competition New Zealand predicted importation would sharply declines (2022) and gradually rises (2024)
- ❖ For exporting to New Zealand; supply chain to be stabilized with increased production level

## **Papaya (With COVID-19):**

- ❖ With prevailing Australian & New Zealander preferential attitude importation predicted relatively stable (2024)
- ❖ For taking prevailing comparative advantages supply chain to be stabilized

## **Kava (With COVID-19):**

- ❖ Considering as GAD drink USA predicted importation would sharply increase (2024)
- ❖ Tonga supply to New Zealand importation need to be monitored till 2024

**With prevailing COVID-19 situation Fiji's foreign exchange earnings from primary sector improved and to be supported by suitable policy actions**

# Thanks



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National  
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