

Vanuatu Agri-Tourism Linkages: A Baseline Study of Agri Demand from Port Vila's Hospitality Sector



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Summary of Findings

This study aims to analyze the purchasing patterns of Vanuatu's tourism sector, in order to better understand existing linkages between the tourism and agricultural sectors, and to identify opportunities to improve these linkages. The study has been conducted by the International Finance Corporation (IFC), a member of the World Bank Group.

The research conducted for this report quantifies two issues. First, this report estimates the demand for vegetables, fruits, herbs, meats and dairy products across the hospitality sector in Port Vila. Secondly, based on this demand estimate, as well as on feedback from specialists working in the sector, the report identifies particular items that present opportunities for local agricultural producers: 'gaps in the market' which could be filled by import replacement.

The data in this report can be used by the Government of Vanuatu, its donor partners, and the agricultural industry to develop, fund and implement the policies and practices required to increase economic linkages between tourism operators and agricultural producers, thus helping to spread the benefits of Vanuatu's growing tourism sector to a greater share of the country's population. Increasing local food production can improve Vanuatu's trade balance, increase food security, and help to more evenly share the benefits of a growing tourism sector across Vanuatu's population, which remains chiefly employed in small-scale agricultural production.

In 2014, the tourism sector in Port Vila (hotels and restaurants) spent 1.5 billion Vatu (USD 15.6 million) on procurement of fresh produce items. Of this amount, 54%, or more than 800 million Vatu (USD 8.5 million), is spent on imported items. Specifically:

- Total demand for vegetables is 190 million Vatu (USD 2 million), of which 108 million Vatu (USD 1.1 million) is spent on imports;
- Total demand for fruits is 155 million Vatu (USD 1.6 million), of which 60 million Vatu (USD 0.6 million) is spent on imports;
- Total demand for meats and dairy is 1.1 billion Vatu (USD 11.7 million), of which 632 million Vatu (USD 6.7 million) is spent on imports;
 - o Total seafood¹ demand is 234 million Vatu (USD 2.5 million), of which 108.7 million Vatu (USD 1.2 million)
- Total demand for herbs is 19.9 million Vatu (USD 0.2 million), of which 3.6 million Vatu (USD 0.04 million) is spent on imports;

This report shows that there are specific items within the import bill that can be produced locally but are either not being produced, or not being produced in sufficient quantities. While meats (including seafood and poultry) and dairy account for 79% of the estimated import bill, Vanuatu also imports significant volumes of staple vegetables and fruits including potato, onion, carrot, capsicum, cauliflower/broccoli, cabbage, tomato, cantaloupe and orange – all of which can be grown in Vanuatu.

The below list accounts for imports in excess of 400 million Vatu (USD 4.2 million), or over 50% of fresh food imports by hotels and restaurants in Port Vila:

- Vegetables, in particular potatoes, onions, carrots and capsicums;
- Fruits, in particular tomatoes, oranges and cantaloupes;
- Seafood items, in particular prawns and fish;

¹ Seafood is distinguished for purposes of cost breakdown. For remainder of the report, seafood is included cumulatively under 'Meats and Dairy' segmentation

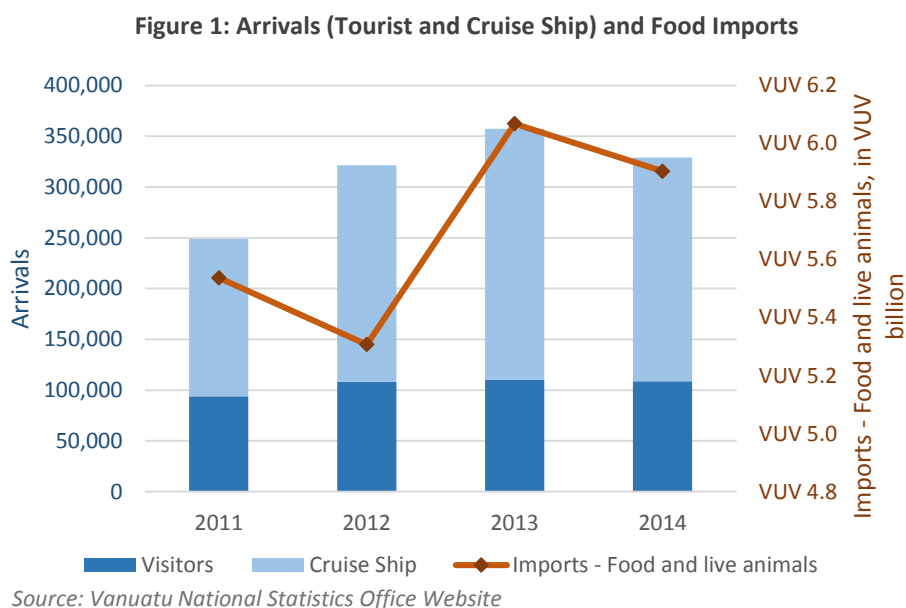
- Meats, in particular pork, lamb, bacon, beef and chicken.

This study therefore identifies meaningful impact that can be delivered by focusing on a particular subset of items. We recommend a further product-by-product review of high-potential items identified by this report, focusing specifically on the technical feasibility of local production (including impact of seasonal fluctuations in tourism demand), as well as on the supply chain challenges for each item (including review of existing out-grower models being applied in subsectors such as horticulture, coffee, cacao).

Introduction

Tourism and agriculture are key drivers of economic growth in Vanuatu. Tourism is a significant contributor to the country's GDP, with tourism expenditure as a percentage of GDP increasing from 26% in 2002 to 33% in 2010². Most tourism revenue is generated in the peak holiday travel months between March and August. Tourism remains concentrated in Vanuatu's capital, Port Vila, which hosts 97% of the tourists travelling to the country. In 2014, Vanuatu saw 108,808 tourists arriving by air.

Imported food items are a significant cost driver for the tourism sector. With the growth in tourism and urban population, Vanuatu's import bill rose 11% between 2011 and 2014. The food and live animal import bill alone stood at 5.9 billion Vatu (USD 62 million) in 2014, comprising 20% of the total import bill for the country.



The hotels and restaurants sector attributes the demand for imports to a lack of a reliable supply of high quality local produce. A significant amount of customer demand – 54% in Port Vila, based on the findings of this report – is being met by imported food, mainly imported meat, fish and dairy produce but also imported fruits and vegetables.

According to stakeholders interviewed for this report, the unreliability and low quality of produce is attributable to a range of constraints, most notably:

² Reserve Bank of Vanuatu, 2012

- Lack of linkages between the buyers (hotels and restaurants) and the farmers via an aggregator or wholesaler, leading to a gap in information exchange and effective marketing of the produce;
- Lack of modern infrastructure and farming tools and techniques, including irrigation;
- Inefficiencies of inter-island shipping, with associated high costs and post production food mishandling;
- Competition from lower quality and lower priced imports, especially from South East Asian countries;
- Inadequate access to high-quality training and sources of affordable capital, limiting semi-subsistence farmers' ability to scale up, along with an absence of a mainstream farmers association leaving farmers with insufficient bargaining power.

Around 80% of Vanuatu's population is dependent in some way on the agriculture sector, which contributes 28% to GDP³. The majority of producers are small-holder farmers living in rural areas, with the sector contributing 71% to total rural household income⁴. Given the potential benefit to the local farmers and economy by transfer of gains, the Government of Vanuatu is focused on reducing the import bill and recognizes the need to strengthen the domestic supply chain to maximize local benefits in the expansion of the tourism sector.

Based on findings in this study and engagement with varied stakeholders, IFC proposes the below key recommendations are implemented in both the short and long term to increase positive changes in the sector.

Policy/Regulatory Initiatives	Logistics and supply chain	Market Development	Farmer Training & Resources
<ul style="list-style-type: none"> • Implement the agriculture sector policy of the GoV. • Review the capacity of the enabling environment to incentivize local production. • Commission product-specific analysis of the value chains of domestic fresh food items, following up on the findings of this report. • Improve collection of data and access to policies on the sector. 	<ul style="list-style-type: none"> • Improvements in agriculture-related infrastructure to improve consistency and quality of supply (irrigation, cold storage, access to modern tools and techniques). • Reduction of inefficiencies in inter-island transport (costs and poor quality handling techniques). 	<ul style="list-style-type: none"> • Encourage entry of aggregators as market enablers and investors, aligning incentives with government policy goals. • Promotion of local food content and outreach to chefs. • Support for an accreditation scheme for food outlets. 	<ul style="list-style-type: none"> • Support for development and consolidation of farmers associations. • Provide access to demand driven and quality training. • Provide information and crop data via radio and mobile phone, through local markets. • Better leverage the skills of the workers under RSE scheme. • Help farmers access sound lending terms.

³ The Vanuatu Agriculture Census 2007 recorded 38,879 households engaged in agriculture activities, resulting in around 175,000 household members (about 80% of the population); Source for contribution to GDP: The World Bank data for 2013

⁴ According to the 2010 Household Income Expenditure Survey.

Next Steps

Tourism and its related industries account for more than 20% of direct economic output in Vanuatu. However, the structure of a tourism industry determines how tourism revenue is spread throughout the economy, and who benefits from growth in the tourism sector. Generally speaking, the breadth of participation in tourism is driven by levels of local content and by the structure of the tax system.

Local content in tourism typically includes local employment opportunities and provision of local products, including food items, to tourists through the supply chain. Looking at this issue from another angle, hotel operating costs in the Pacific Islands are driven by energy, food purchasing and provision, labor, and facilities maintenance and upgrades. These are the segments of the supply chain where local content can be increased.

The below recommendations for moving forward in improving linkages between the tourism and agriculture sectors in Vanuatu are based on discussions with government, producers, and the tourism industry during the process of gathering data for this report. These recommendations closely follow the recommendations and findings of the recent *Vanuatu Fruit and Vegetable Sector Value Chain Analysis* conducted by the Food and Agriculture Organization.

Policy/Regulatory Initiatives

- Implement the agriculture sector policy⁵ finalized in 2015 and the upcoming subsector policies, to lay a strong foundation for the sector into the future.
- Review the current enabling environment to see whether it can be optimized to incentivize the government's policy goals of increasing local food content, rather than meeting demand through imports. Such a review should be conducted product-by-product, in close coordination with producers, to ensure that local production can gradually ramp up to meet demand.
- Commission further product-specific analysis of the value chain of key products identified as high priority through this study. These include pork, lamb, bacon, beef and chicken; seafood items including prawns and fish; vegetables including potatoes, onion, carrots and capsicums; and fruits including tomatoes, oranges and cantaloupes. These products account for more than half of the value of fresh produce imports identified. Under the proposed European Development Fund 11 Rural Development Program, value chains of some of these products may be analyzed further.
- Improve access to agriculture sector data, including regular dissemination of agricultural policy and research via the policy bank to help to reduce the knowledge gap.

Logistics and supply chain

- Agriculture-related infrastructure needs to be improved. Hydroponic techniques and improved irrigation facilities where applicable, cold storage facilities along the supply chain and modern tools and equipment for farmers are needed to support further growth.
- Inter-island transportation inefficiencies need to be addressed, along with improving transport of fresh perishable produce to minimize bruising and post-harvest spoilage.

Market Development

⁵ http://www.malffb.gov.vu/doc/Vanuatu_Agriculture_Sector_Policy.pdf

- An aggregator, whether a commercial wholesaler or a cooperative, could play a key role in organizing market supply, investing in improved post-harvest technology such as cold storage for consistency of supply, and providing a coordinated point of contact for hotel procurement teams for weekly product and price lists.
- Increase promotion of local food content and proactively reach out to Chefs and procurement teams of hotels/restaurants, to encourage the use of local produce in menus via ongoing communication channels.
- Consider the establishment of an accreditation program for food hospitality outlets to help ensure better standards, higher customer loyalty and producer accountability. A program that could provide participants with improved market access (similar to the Ambassador's program in tourism) would likely see higher uptake.

Support to Farmers

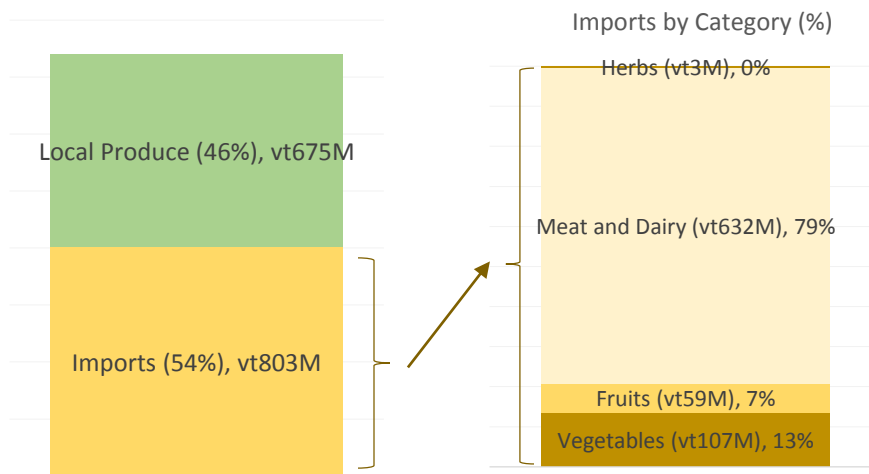
- Support the development and potential consolidation of farmers' associations to create a more even playing field for small-holder farmers. In addition to improving the bargaining power of farmers at marketing, associations can provide centralized access to crop data, good-quality inputs, information and training on better growing and harvesting techniques, as well as finance models for upgrading equipment and investing in production.
- Training and outreach to farmers should be based on a demand-driven approach. Some training areas identified during discussions for this study are modern farming techniques, disease management, product packaging and post-harvest handling. Financial management training including cost management and pricing – currently, most farmers' price based on the next farmers' pricing instead of their own cost structure, thus inhibiting competitiveness and efficiencies. The Vanuatu Cooperative Federation is producing training manuals which is a positive step in this direction.
- Provide data and information to farmers via channels such as radio (as has been traditionally used), mobile phone apps, text messaging and road shows/camps near the markets for information related to key agricultural variables, such as weather forecasts, crop data, information on improved quality seeds/techniques.
- Consider leveraging seasonal workers returning from Australia and New Zealand, who often have saved up capital and have learnt basic techniques (usually harvesting) from overseas employment under the Regional Seasonal Employment scheme. This group may be good candidates for additional training to strengthen the local supply side/farms.
- Access to finance continues to be a key challenge for local farmers. The high associated cost of capital to counter the risk of lending to a small farmer leads to farmers either not borrowing from formal channels or not being able to generate enough return to make the business sustainable. Accessible loans at an affordable rate remain a key component of future sector development.

Key Findings by Product

Based on the survey findings and extrapolating it to the market in Port Vila, it is estimated that:

- 1.5 billion Vatu (USD 15.6 million) is spent annually by hotels and restaurants on fresh food items, including meats and dairy.
- 54% is imported, amounting to a total of more than 800 million Vatu (USD 8.5 million). 46% is procured locally, amounting to 675 million Vatu (USD 7.1 million).
- These imports accounted for approximately 14% of total food and live animal imports in FY14.
- 79% of imports are attributable to demand for meats (including poultry and seafood) and dairy.

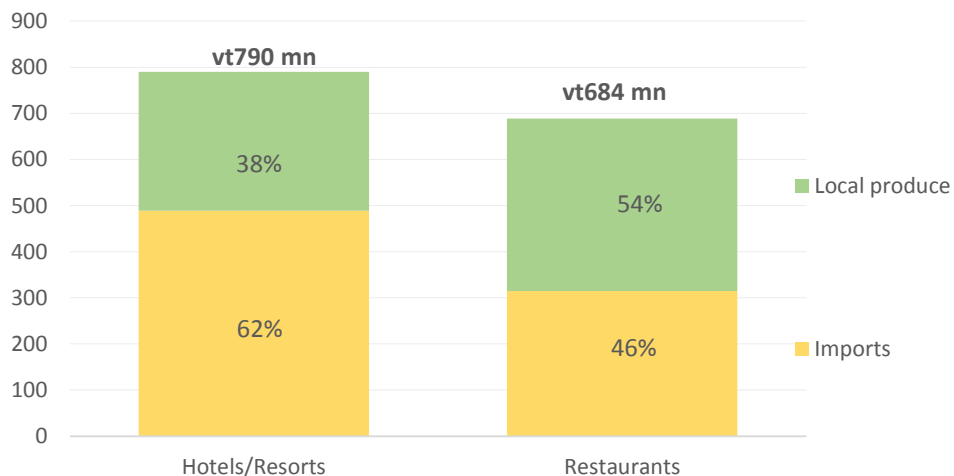
Figure 2: Total Demand, in Vatu million and Imports by Category (%)



Hotels versus Restaurants

Of the total demand, the hotel sector (53%) has a slightly higher share than the restaurant sector (47%). However, it is worth noting that hotels import 62% of their produce, much higher than 46% for restaurants.

Figure 3: Total demand for Hotels and Restaurants Segments



The procurement approach followed by hotels and restaurants seems to vary meaningfully. Some key differences identified are;

- **Assessment of daily needs:** Restaurant needs can be assessed on a daily basis and can be met in a more flexible manner by sourcing replenishments easily from the market or shop. Most restaurants purchase on a daily/weekly basis and additionally as needed. Hotel demand is more clustered.
- **Certainty about future orders:** Hotels have projections of food demand through advanced booking numbers, which enables them to pre-order food products to a better extent versus the restaurants, where demand is more erratic and on a day to day basis.
- **Procurement procedures:** Receipts are generally unavailable from the central market, making it difficult for large hotels to purchase fruit and vegetables due to their need for documentation for internal accounting systems. Smaller businesses, however, may be able to accommodate ad-hoc purchases more flexibly. Also, hotels often have long term contracts for imports to get better prices and consistent supply.
- **Quality of the produce:** Some restaurateurs were more accepting of the variance in quality and quantity of market produce and therefore more willing to buy local produce.
- **Network with the local producers:** Restaurants tend to have better local networks and information channels with growers and market vendors. Many restaurants are using local growers directly and have local touch points for regular supply of fresh fish. Growers are possibly more comfortable approaching restaurants with smaller volumes than hotels, who have stricter requirements in terms of quality, quantity and need for consistent supply.

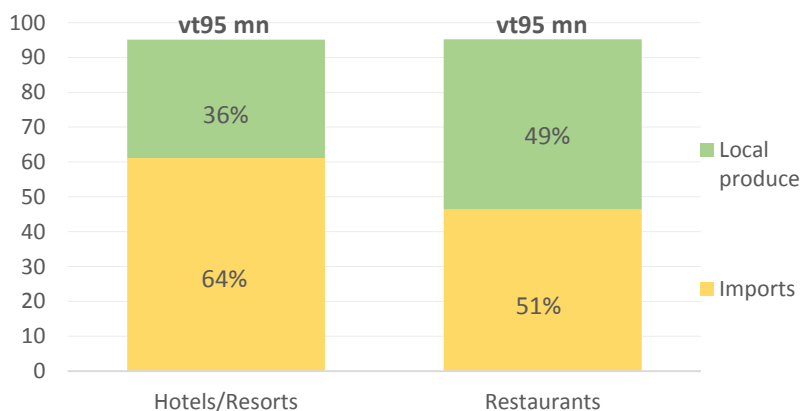
While hotels catered to mainly air travelers, restaurants indicated a mixed customer base between residents, air tourists and cruise visitors, with some catering towards one over the other. Almost all restaurants reported an increased number of customers on cruise ship days.

Vegetables Segment

Vegetables demand is expected to be 13%, 190 million Vatu (USD 2 million), of the total demand from the hotels and restaurants sector; and 13% of imports, 108 million Vatu (USD 1.1 million), in terms of value.

The total vegetables demand is equally split between hotels and restaurant segments. In all, 58% of the vegetables demand comes from imports (in value terms) - import percentage being higher for the hotels segment versus restaurants as can be seen below.

Figure 4: Total 'Vegetables' demand for Hotels and Restaurants Segments



Vegetable Products

The top seven imported vegetables are as below. These account for more than 75% of the vegetables imports by value. Peas and garlic are harder to grow locally due to unsuitable climate conditions; the rest of the items can be grown locally.

Figure 5: Top 7 'Vegetables' by import value

Vegetable	Import Volume (kg)	Import price (vt/kg)	Import Value (vt)	Potential for local production?
Potato	99,288	195	19,361,249	Yes
Garlic	9,220	1,500	13,829,936	No
Peas	3,841	2,950	11,330,718	No
Carrot	31,575	350	11,051,348	Yes
Onion	52,129	195	10,165,197	Yes
Cauliflower	10,218	950	9,706,751	Yes
Capsicum	5,700	1,600	9,120,442	Yes

The table below (figure 6) matches the demand of the imported food item with an assessment of the technical feasibility to produce it locally, resulting in a determination of low, medium and high for import substitution. The demand for the vegetables highlighted in yellow is majority met by imports and items in green are majorly sourced domestically. The red highlights represent vegetables with 20% to 80% demand being met through imports, usually via organized retail channels. Items in this section may have the potential to be increased but growth could be constrained by a lack of knowledge of farming the item, lack of transport between the local islands or unsuitability of the ecological conditions. Also, these vegetables may be primarily grown locally, but are imported due to seasonality or during the peak tourist season i.e. Jun - Oct months.

Observations

Products with at least 20% of the demand being met via imports and highlighted in red in both the 'Priority' and 'Technical Feasibility' columns are the products where there seems to be most potential for reducing the import bill. The key vegetables in this category are **potato, onion, carrots and capsicum**.

Buyers stated there is a growing market awareness of produce that can be grown domestically. Items such as baby beetroot, radish, carrots, a greater variety of herbs, green and red cabbage have started growing in recent years. Additionally, some produce appears to be in more constant supply in the market than in previous years, for example capsicums and cucumbers. Also, buyers reported that certain produce is available in the market for a longer 'season', such as lettuce, eggplant and cherry tomatoes.

Other products with relatively lesser demand, like broccoli, corn and cabbage, can easily be grown locally and should be incentivized to do so. The import demand for them may not currently be as significant but there is some import happening for these that can be substituted with local produce.

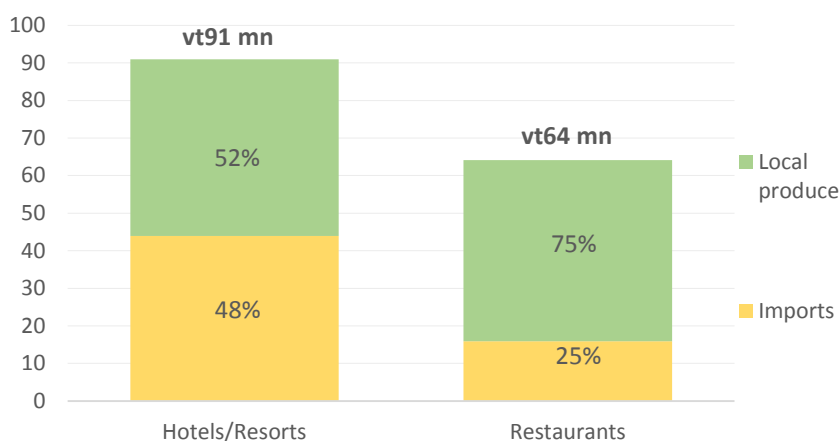
Figure 6: Imports percentages with local substitution potential for 'Vegetables'

Product	Imports as % of product demand (volume)	Priority (based on % of veg imports in \$ terms)	Technical feasibility of Local production	Comments
Potato	Above 80%	High	High	Produce harvested in Tanna in 2014. Maintaining supply of seed potato has been a challenge. Red potato trials in Tonga.
Onion	Above 80%	High	High	Potential for local cultivation
Carrot	Above 80%	High	High	Poor quality and limited supply; possibility of growth.
Cauliflower	Above 80%	High	Medium	Good quality produce is time bound to colder months, especially in Tanna.
Garlic	Above 80%	High	Low	Local supply limited due to sensitivity to photoperiod (suitable daylight is not available in Vanuatu).
Peas	Above 80%	High	Low	Requires specific temperature difference not largely available in Vanuatu.
Mushroom	Above 80%	Medium	N/A	Possible Trial starting
Turnip	Above 80%	Low	N/A	Insignificant share of total veg imports (<1%)
Escallots	Above 80%	Low	N/A	Insignificant share of total veg imports (<1%)
Celery	Above 80%	Low	N/A	Insignificant share of total veg imports (1%)
Beetroot	Above 80%	Low	N/A	New product for local farmers. Very limited supply. Insignificant share of total veg imports (<1%)
Capsicum	20% – 80%	High	High	Imports likely due to seasonality and during peak tourist season. Green capsicum is easier to grow in Vanuatu than red.
Cabbage	20% – 80%	Medium	High	New product for local farmers. Limited local supply but potential exists (Samoa sources most of its cabbage locally).
Corn	20% – 80%	Medium	High	Distributed to known customer base (largely restaurants). Good local supply.
Broccoli	20% – 80%	Medium	High	Significant price difference between local and import price. Slightly more tolerant to conditions than cauliflower.
Leek	20% – 80%	Medium	N/A	Insignificant share of total veg imports (1%)
Asparagus	20% – 80%	Low	N/A	Insignificant share of total veg imports (<1%). Private growers supply to a limited customer base.
Lettuce	Below 20%	High	High	6% of total veg imports in value. Imports likely due to seasonality and during peak tourist season.
Spinach	Below 20%	Medium	High	A few spinach like crop substitutes which grow well in Vanuatu – Amaranthus, Kang Kong, island cabbage (bele)
Bok choy	Below 20%	Low	High	Insignificant share of total veg imports (<1%)
Cucumber	Below 20%	Low	High	Insignificant share of total veg imports (<1%)
Sweet potato	0%	Low	High	Locally procured.
Green beans	0%	Low	High	Locally procured.
Pumpkin	0%	Low	High	Locally procured.
Chili	0%	Low	High	Locally procured.
Eggplant	0%	Low	High	Locally procured. Sometimes poor quality.
Taro	0%	Low	High	Locally procured.
Radish	0%	Low	High	Locally procured.
Squash	0%	Low	High	Locally procured.

Fruits Segment

Fruit demand is expected to be 10%, 155 million Vatu (USD 1.6 million), of the total demand from the hotels and restaurants sector, but only 7%, 60 million Vatu (USD 630,000), of imports in terms of value. Overall, only 39% of the fruits demand is met by imports, much lower than the overall average of 54%. The total fruits demand is 40% higher from the hotels segment versus restaurants segment. Restaurants source 75% of the fresh fruit required from the local market.

Figure 7: Total 'Fruits' demand for Hotels and Restaurants Segment



The top seven fruits imported are as below. These account for almost 75% of the fruits imports by value. Tomato quality and production in very warm wet months is limited, except for cherry tomatoes, leading to possible imports. Fruits such as apples can't be grown locally due unsuitable weather conditions and will continue to be imported.

Figure 8: Top 7 'Fruits' by import value

Fruit	Import Volume (kg)	Import price (vt/kg)	Import Value (vt)	Potential for local production?
Tomato	10,645	1200	12,774,409	Yes
Apple	18,796	550	10,337,620	No
Kiwi	6,957	950	6,609,221	
Cantaloupe	4,048	950	3,845,365	Yes
Grape	2,066	1800	3,718,873	No
Orange	5,770	550	3,173,630	Yes
Blueberry	3,538	750	2,653,226	

The table below (Figure 9) matches the demand of the imported food item with an assessment of the technical feasibility to produce it locally, resulting in a determination of low, medium and high for import substitution. The demand for the fruits highlighted in yellow is majority met by imports and items in green are majority sourced domestically. The red highlight represents fruits with 20% to 80% demand being met through imports.

Observations

Products with at least 20% of the demand being met via imports and highlighted in red in both the 'Priority' and 'Technical Feasibility' columns are the products where there seems to be most potential for reducing the import

bill and warrant further analysis. The key fruits in this category are **‘tomato’** and to some extent **‘oranges and cantaloupe’**.

Tomatoes are the highest imported fruits, largely due to poor quality and production in very warm wet months. A processing plant would go a long way in avoiding product wastage and preservation for use in alternative months, reducing imports.

Temperate fruits, such as apples, present an opportunity to be partly substituted by local fruits. For example, when mango is in season, it was observed that demand for apples is lower. Tourists are keen to sample local fruits and this is an area to work with hotels – increasing their selling point if providing a good selection of local tropical fruits on the breakfast table.

Figure 9: Imports percentages with local substitution potential for ‘Fruits’

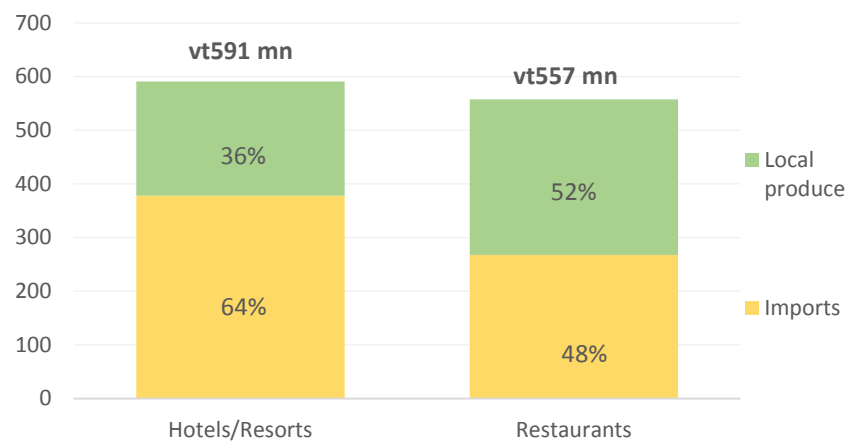
Product	Imports as % of product demand (volume)	Priority (based on % of veg imports in \$ terms)	Technical feasibility of Local production	Comments
Cantaloupe	Above 80%	High	High	
Apple	Above 80%	High	Not possible	Not possible to produce
Kiwi	Above 80%	High	N/A	
Grape	Above 80%	High	Low	
Blackberry	Above 80%	High	N/A	
Blueberry	Above 80%	Medium	N/A	
Pear	Above 80%	Medium	Low	
Date	Above 80%	Medium	N/A	
Strawberry	Above 80%	Medium	Medium	
Peach	Above 80%	Medium	N/A	
Raisin	Above 80%	Medium	N/A	
Fig	Above 80%	Medium	N/A	
Chinese pear	Above 80%	Medium	N/A	
Olive	Above 80%	Low	N/A	Insignificant share of total fruit imports (1%)
Cranberry	Above 80%	Low	N/A	Insignificant share of total fruit imports (1%)
Orange	20% – 80%	High	High	Likely due to seasonality and during peak tourist season.
Tomato	20% – 80%	High	High	Limited quality and production in the very warm wet months (except for the small cherry tomato).
Raspberry	Below 20%	Medium	High	Significant price difference. Import likely due to seasonality and during peak tourist season.
Watermelon	Below 20%	Medium	High	Significant price difference. Import likely due to seasonality and during peak tourist season.
Pineapple	Below 20%	Medium	High	Seasonal, but out of season production by hormone flower induction is fairly straight forward. It is being done in Fiji and FAO is just commencing a project on this in Vanuatu.
Banana	0%	Low	High	Locally procured
Breadfruit	0%	Low	High	Locally procured
Grapefruit	0%	Low	High	Locally procured

Product	Imports as % of product demand (volume)	Priority (based on % of veg imports in \$ terms)	Technical feasibility of Local production	Comments
Guava	0%	Low	High	Locally procured
Lemon	0%	Low	High	Locally procured
Lime	0%	Low	High	Locally procured
Mango	0%	Low	High	Locally procured
Papaya/PawPaw	0%	Low	High	Locally procured
Star fruit	0%	Low	High	Locally procured
Coconut	0%	Low	High	Locally procured
Avocado	0%	Low	High	Locally procured

Meats and Dairy Segment

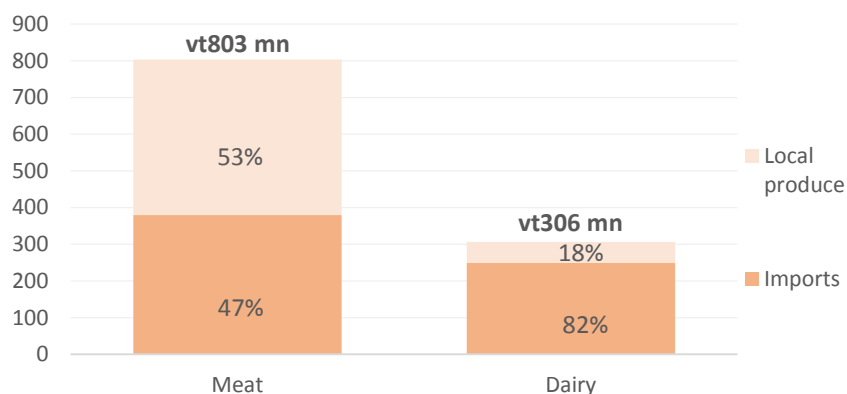
Meats and dairy demand is worth 1.1 billion Vatu (USD 11.6 million), and is estimated to be 75% of the total demand from the hotels and restaurants sector in Port Vila. Significantly, it accounts for 79% of imports in terms of value, 630 million Vatu (USD 6.6 million). In line with the overall trend, hotels import a higher percentage of their demand versus the restaurants. While meats, including seafood, constitute the largest segment as a category, the import percentage is much higher for the dairy products (as seen in Figure 11). With the exception of eggs⁶, all dairy demand for milk, cream, cheese and butter is completely met by imports.

Figure 10: Total 'Meats and Dairy' demand for hotels and restaurants segments



⁶ Prior to Cyclone Pam, eggs were mostly produced locally.

Figure 11: Total demand for 'Meats' and 'Dairy' segments



* Eggs are being counted as dairy

Of the top five imported meat products, bacon tops the list. These five products account for 88% of meat imports. Vanuatu's seafood imports, including prawns, are valued in excess of 100 million Vatu (USD 1.1 million). The seafood segment has often faced stiff price competition from imports from South East Asian countries.

Figure 12: Top 5 'Meats' by import value

Meat product	Import Volume (kg)	Import Price (vt/kg)	Import Value (vt)	Potential for local production?
Bacon	54,330	2,600	141,258,537	Yes
Prawns	16,463	4,500	74,081,701	Yes
Chicken	39,296	1,350	53,049,276	Yes
Lamb	13,351	2,950	39,384,017	Yes
Pork	23,664	1,250	29,579,466	Yes

With the exception of eggs, all dairy demand is met via imports. Dairy is classified as cheese, milk, cream, butter and eggs. Dairy imports account for about 250 million Vatu (USD 2.6 million), 30% of total imports as covered in this report. Lack of local dairy supply is one of the biggest supply side challenges and some of the participants indicated it is one of their highest cost categories. One participant especially indicated that they have tried to eliminate cheese from their menu due to the procurement expenses. This is the most challenging area for import substitution. Fiji has gone some way but the Rewa Dairy in Fiji imports bulk milk to convert into dairy because local produce is never enough. There are big logistical challenges to collect and distribute dairy in Vanuatu. Also, the weather conditions in Vanuatu are not perfectly conducive to a long shelf life for milk.

Figure 13: Top 5 'Dairy products' by import value

Dairy product	Import Volume (kg)	Import Price (vt/kg)	Import Value (vt)
Cheese	50,823	1,980	100,630,075
Milk	278,481	250	69,620,305
Cream	44,461	995	44,238,305
Butter	27,612	1,232	34,018,095
Eggs	1,293	950	1,228,488

The table below (Figure 14) matches the demand of the imported food item with an assessment of the technical feasibility to produce it locally, resulting in a determination of low, medium and high for import substitution. The table below shows the demand for the products highlighted in yellow as majority met by imports.

Observations

Meat products, such as **Lamb, Pork and Bacon**, have huge potential to be supplied locally. These products may need product specific interventions to let the market take off and definitely warrant further analysis⁷. While a bulk of the beef supply comes from local sources, however in absolute terms, there is sizeable import being done for beef and beef products. This market needs to be continued to be developed locally.

Chicken has sizeable domestic supply but also, sizeable imports due to reasons like cost associated with maintaining the chickens during the off peak tourist season.

Seafood certainly has huge potential for local production but has often been out bid by lower prices from imports in South East Asian countries. The imported produce is often cheaper as well as more consistent in supply incentivizing buyers, especially hotels, to source via bulk deals. The seafood industry calls for further analysis to be developed locally, whether via generic sea food supplies or developing the market for exotic seafood products.

While dairy is possible to develop locally and Vanuatu has a checkered history of dairy farms, currently, there is no active sizable dairy producer. It has had sustainability challenges due to scale required for financial stability, logistical issues, well trained and skilled employees and unsuitable climate for a long shelf life. Hence, it ranks low from a technical feasibility standpoint.

Figure 14: Imports percentages with local substitution potential for 'Meat and Dairy products'

Product*	Imports as % of product demand (volume)	Priority (based on % of meat & dairy imports in \$)	Technical feasibility of Local production	Comments
Bacon	Above 80%	High	High	Possible to develop this supply locally as strong demand exists but quality, price and consistency in supply need to be taken care of.
Lamb	Above 80%	High	Medium	Need to import suitable embryo for production and then possible to have a sustainable local production.
Cheese	Above 80%	High	Low	Logistical and sustainability challenges. Fragile history.
Milk	Above 80%	High	Low	Logistical and sustainability challenges. Fragile history.
Cream	Above 80%	High	Low	Logistical and sustainability challenges. Fragile history.
Butter	Above 80%	High	Low	Logistical and sustainability challenges. Fragile history.
Smoked Salmon	Above 80%	Medium		
Scallop	Above 80%	Low		Insignificant share of total meat and dairy imports (1%)
Ducks	Above 80%	Low	High	Insignificant share of total meat and dairy imports (1%). A small, but growing market.
Chicken	20% – 80%	High	High	Partly due to inability to bear feeding cost for non-peak tourist season.
Prawns	20% – 80%	High	High	Faces stiff competition from import prices
Pork	20% – 80%	Medium	High	Possible to produce locally.

⁷ Not covered in the scope of this study.

Product*	Imports as % of product demand (volume)	Priority (based on % of meat & dairy imports in \$)	Technical feasibility of Local production	Comments
Veal	20% – 80%	Low	High	Insignificant share of total meat and dairy imports (1%)
Fish	Below 20%	Medium	High	Currently being produced domestically but faces stiff pricing competition from imports
Eggs	Below 20%	Low	High	Was largely locally supplied. Local egg supply took a hit after Cyclone Pam (a key supplier went out) and was compensated by imports ⁸
Beef	Below 20%	Low	High	Largely locally supplied. However, still significant import volumes due to high beef demand. Need to continue strengthening local production.
Crab	Below 20%	Low	High	
Lobster	0%	Low	High	

* Grey highlights indicate dairy products

Herbs Segment

The value of herbs demand from the hotels and restaurants in Port Vila is insignificant in the total demand (barely 1%) and insignificant (less than 0.5%) as a percent of total imports. The total imports are estimated to be only 3.6 million Vatu (USD 38,000). Restaurants source most of their herbs locally. For the hotels, one of the key imported herb/spice is vanilla but remains insignificant compared to other key vegetables, fruits and meats.

Figure 15: Total 'Herbs' demand for Hotels and Restaurants Segments

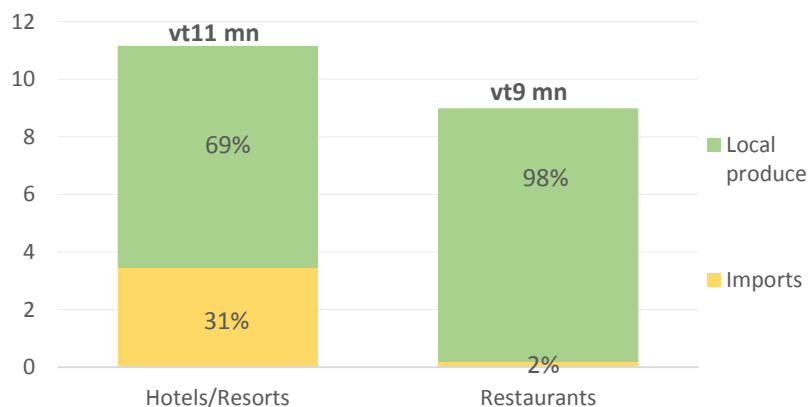


Figure 16: Top 4 'Herbs' by import value

Herbs	Import Volume (kg)	Import Price (vt/kg)	Import Value
Vanilla	25	100,000	2,529,845
Pepper	76	6,400	489,343
Paprika	25	9,999	252,959
Basil	76	2,500	189,738

⁸ The data for this study was collected prior to Cyclone Pam.

The herbs section as a whole is quite small and may not be required to be treated as a priority at this stage. Some herbs like basil, parsley and sage are appearing in the market more often than before and this sector has evolved in a positive direction in the past few years.

Figure 17: Imports percentages with local substitution potential for 'Herbs'

Product	Imports as % of product demand (volume)	Priority (based on % of herb imports in \$ terms)	Technical feasibility of Local production	Comments
Paprika	Above 80%	High	N/A	
Oregano	20% – 80%	Low	High	
Pepper	20% – 80%	High	High	
Rosemary	20% – 80%	Low	High	
Thyme	Below 20%	Low	High	
Vanilla	Below 20%	High	High	
Chives	Below 20%	Low	High	
Basil	Below 20%	High	High	
Cilantro / Coriander	Below 20%	Medium	High	
Mint	Below 20%	Low	High	
Parsley	Below 20%	Low	High	
Cinnamon - Dried	0%	Low	High	
Dill	0%	Low	High	
Ginger	0%	Low	High	
Spring Green onion	0%	Low	High	
Sage	0%	Low	High	

Major Fresh Food Suppliers and Other Stakeholders

Besides the local markets, some of the key suppliers include EcoFresh, NuGrow, Au Bon Marche, and Vanuatu Direct. Other food supplies, such as meat, are sourced through the butcheries at Au Bon Marche, Leader Price and South Pacific Meat Supplies (more likely to supply pork, bacon and on rare occasions, lamb). Pechan's Continental Small Goods supplies the niche meat products such as chorizo, bacon, and salami.

- **EcoFresh** – Suppliers of lettuce, capsicums and tomatoes. They grow vegetables all year round using a hydroponic system. Pre-cyclone they had recently upgraded their irrigations system to ensure better future cherry tomato production. EcoFresh currently supplies lettuce, red and green capsicums, cherry tomatoes and a small selection of herbs. Their current growing program of large tomatoes requires some additional work to get it to a level of consistent supply, and a pest free quality product. Future plans include developing a greater range of herbs (currently they are trialing 12 varieties of herbs), mixed salad leaves and possibly mushrooms. This project is being undertaken with a partner, Vanuatu Agricultural Supplies. Priority customer is Au Bon Marche, followed by the hospitality sector.
- **NuGrow** – Suppliers of ground crops, usually lettuce, capsicums and tomatoes. Most of their business is with small restaurants.
- **Vanuatu Cattle Company & VAL Pacific:** The Company is a public Company owned by the Vanuatu Government and private investors that exports natural grass-fed, antibiotic and hormone free beef. The plant was originally built in 1972 and since that time has upgraded every year. In its current configuration the plant can export to New Zealand, Australia, Fiji, Papua New Guinea, Japan, Kiribati, Tuvalu, Wallis & Fortuna, Samoa, Tahiti, New Caledonia. The plant process natural beef. The natural beef comes from farms that only feed them grass and are antibiotic and hormone free. The beef in Vanuatu has no diseases. The plant employs 92 people, 90 are Ni- Vanuatu people. They are highly skilled. The plant runs under 53 quality systems which are audited by the quality assurance officer and by the technical manager. A Government veterinarian comes to the plant daily and also does an audit. While we are processing there are two meat inspectors present. The food safety program is run to the same standard as New Zealand M A F.
- **Au Bon Marche** – Supplier of many fresh produce when it either cannot be obtained from the market or is out of season. Largest volume of fresh produce supplied to the hospitality sector include carrots, onions, potatoes, apples and oranges. Many hotels/restaurants rely on Au Bon Marche to be the supplier of produce outside of the local growing season and produce that is currently unavailable or grown locally during the off season. Additionally tinned produce for out of season purchases are usually obtained from Au Bon Marche.
- **Vanuatu Direct** – A collective of local growers (60 local Ni Vanuatu growers) who sell their fresh produce to Vanuatu Direct, who then on-sell to the Vanuatu Direct network of buyers – a mixture of local residents and the hospitality sector. The contract growers are also mentored by the Vanuatu Direct directors. Produce grown on the farm varies and can depend on the contract growers willing to pay for good quality seed. Produce is sold to Au Bon Marche, Leader Price and the Chinese food outlets and they generally supply corn, greens, kumara, cucumber, tomatoes, and cauliflower. Vanuatu Direct are also in talks with VANWOODS to develop a honey industry with women 'beekeepers'. Vanuatu Direct shifted from being an importer of key food items for the hospitality sector (potatoes, carrots and onions) to currently developing high quality Vanuatu product to export.

- **Traverso** – Supplier of fresh produce from Ecofresh and local growers and some imported foods (i.e. onions, carrots, bacon, and processed meats). Traverso does not have any regular orders to supply the hospitality sector, though, they supply regular food (meat) to the Chinese food outlets. Meat and specialty meats are their principal product line. Usually, Traverso is a last resort source of supply due to the small quantities held by the supermarket and they recognize the same. Traverso limits what it can import due to restrictions on storage, consequently they are not importing directly for any particular hotel or restaurant. The core business used to be the hospitality sector but that has changed due to a business decision not to allow a credit account system for the sector.
- **Vate Ocean Gardens** - Vate Ocean Gardens was developed in collaboration with Vate Copravi Prawns Ltd based upon diversification and competition issues. This company originally started as a prawn farm to supply the domestic market, however with competition issues, they diversified into fish farming. Currently, they are breeding barramundi (4 species), Red Talapia and Basa fish. Presently, all fish is harvested for the Fiji market due to importation competition in Vanuatu.

Few respondents import directly (depending on whether they have their own storage for meats and other products or whether they require specialty products like sauces). It has been reported that a 'wholesale price' in Vanuatu is practically the same as a 'retail price' for goods, contrary to what generally happens in overseas wholesale market distribution.

Some other key stakeholders in the market are:

- **Vanuatu Agricultural Supplies (VAS)** – Some of their key focus of work include: (1) Ground grown herbs and a nursery for hydroponic salad leaves that can be harvested 3-4 times per week. While they acknowledge that in the beginning the volume will vary, they expect to pick 20-30 cartons a day. (2) On the project with EcoFresh described above, the key challenges as per VAS is the requirement for blemish free quality product for the supermarket and restaurants and consistent supply. This consequently requires a large investment of capital to ensure year-round supply. (3) VAS also assists Ni Vanuatu growers with crop husbandry advice and managing crop disease. They are seeing a growing trend in local growers developing non-traditional crops such as watermelon, and this may be because of better financial returns on the crop.
- **Farm Support Association (FSA)** - The Farm Support Association (FSA) provides extension support to assist small-holders to establish farming systems (chicken, goats and pigs) and vegetables, fruit and root crop gardens. In terms of fresh produce, the FSA works with local Ni Vanuatu growers to run trials of fruit and vegetables crops and providing advice in aspects of nursery techniques, disease and pest prevention and provision of seeds. Most of their work in this area is in Malekula and Pamma and about 10 farmers on Efate. The FSA is developing a work program to increase the numbers of farmers they are working with on Efate. Currently they are working with farmers to grow a range of fresh produce and are currently surveying them to see what produce they are currently growing. In Tanna, the FSA have an additional scope of work with about 50 farmers mostly growing potatoes. The work program is due to harvest their second crop of potatoes from a ½ hectare field in October 2015. The FSA is also trying to raise awareness of growers around quality issues, extension of the growing season, as well as management and packaging of the produce during transport to market.

Scope and Methodology

Sample Set: The survey targeted hotels/resorts with restaurants and stand-alone restaurants in Port Vila, Efate. Efate receives 97% of all visitors to Vanuatu⁹. IFC compiled a list of 40 hotels/resorts with restaurants and 44 independent restaurants in Port Vila from TripAdvisor listings. A sample of these organizations were surveyed, including 15 hotels and 10 restaurants¹⁰ in 2013 and 2014.

Extrapolation to represent the market: Analysis in this report is based on the inputs received from surveyed hotels and restaurants and extrapolated to represent the whole market. As per scope of the report, any reference to total demand or imports that may be mentioned in this report refers to the demand or imports by the hotels and restaurants in Port Vila unless specifically mentioned otherwise. Extrapolation is based on the principles below:

- **Hotels:** 15 hotels with an estimated room capacity of 841 were surveyed out of a total of 40 hotels/restaurants with a total room capacity of 1182¹¹. This represents a coverage of 71% of the market as a part of the survey. Assuming survey responses reflected 71% of the hotels demand by product and in aggregate, we extrapolated it on a pro-rata basis to represent 100% of the market in the hotels segment.
- **Restaurants:** The total of 44 restaurants were segregated into a list of 'Top 30' restaurants and 'the rest' based on TripAdvisor review ratings. Based on the average customers served by restaurants per day, the 'Top 30' restaurants averaged 54 customer servings per day with the rest averaging 37 customer servings per day. Multiplying the number of restaurants by the number of customers served results in a total of 2,138 customers served per day by the market in Port Vila. Nine restaurants from the Top 30 and one from the rest of the restaurants category were surveyed, resulting in a total of 496 customers served per day by the surveyed restaurants. This represents a coverage of 23% of the market as a part of the survey. Assuming survey responses reflected 23% of the restaurants demand by product and in aggregate, we extrapolated it on a pro-rata basis to represent 100% of the market in the restaurants segment.

Quantity Demanded: Businesses provided information on the quantity procured locally and imported from overseas by product across a range of vegetables (30 varieties), fruits (38 varieties), meat and dairy products (18 varieties) and herbs (18 varieties) during the high and low tourist seasons. We have presented a volume based analysis at individual product level since aggregation is impossible due to the variance of volume units across products.

Prices: A standard price set collected around February/March, 2014 was used across the data set.

Aggregation: The quantity demanded and the price data has been multiplied to arrive at the dollar value for each product. The figures have been aggregated and extrapolated to represent the whole market on the basis of principles explained above. Analysis has been presented at an aggregate and at a product level as well.

Product Level analysis: The report includes a product level analysis that results in recommendations for import substitution. For this analysis, two key metrics are used:

- (1) Priority – This metric represents impact on imports and the importance of local substitution in the product category. This is based on specific product imports as a percentage of total imports in the product's category (in value terms). High refers to products with more than 5% share, Medium refers to 1%-5% share and Low refers to 0% - 1% share.

⁹ Any reference to hotels in this report includes resorts segment.

¹⁰ An additional 9 restaurants gave on average plates per day and plate costs only.

¹¹ Based on information from TripAdvisor.

(2) Technical Feasibility of Local Production – This represents the possibility of producing the product locally in Vanuatu and is based on inputs from the agricultural experts and stakeholders. The products with a ‘High’ rating on both measures could be further assessed for import substitution opportunities.

Exchange Rate: The report presents the impact/market size in both Vanuatu Vatu US dollar terms. The exchange rate used is the average exchange rate for USD and Vatu in 2014, being 1 USD = 94.95 Vatu (Source: www.oanda.com)

Challenges related to data aggregation

- **Timing of the survey for the hotels and restaurants:** The hotels survey (2013) and restaurants survey (2014) were completed with a gap of about one year and any differences in the patterns during this year in demand have not been accounted. The price set used is standard across both categories of survey to avoid discrepancies due to price fluctuations.
- **Setting time with the relevant person:** The relevant person varied from business to business – in some cases, it was the restaurant owner, while sometimes it was a junior delegate. Sometimes the quality of the discussions and responses varied by organization.
- **Subjective interpretation of the survey questions and inconsistent data:** At times, the respondents required that the survey be left with them or sent it via email, rather than collecting the data in an interview. In these cases, the responses were sometimes inconsistent with discussions, incomplete and subject to respondents interpretation of the survey questions. Manual adjustments to the data have been made in some cases. In cases where the low season data has not been provided by the respondent, a 25% reduction has been assumed in purchasing/demand based on overall discussions with the stakeholders.
- **Definitions of the high/low seasons:** While it was clearly communicated to the respondents that the ‘high’ and ‘low’ season responses must be based on tourist season, some respondents may have misinterpreted these to be the produce growing season. No amends have been made in this case.
- **Price data:** The price data was collected in early 2014, in pre cyclone Vanuatu. This may be slightly dated and have meaningfully changed after the cyclone. Also, this data may be impacted by the month/season of price collection depending on which products were out of season at that time and may have been more expensive.
- **Supplier side interviews:** The interviews have focused on the suppliers of fresh goods being generally green vegetables, rather than suppliers of all goods such as meat and dairy produce. This is due to the value of understanding this aspect better in the short time frame.

Annexes

Annex 1A – Aggregate data by product for ‘Vegetables’

Vegetables	Total Annual Spend (Vt)	IMPORTED				LOCAL			
		Annual value Import (vtu)	Annualized Volumes	Price	Per unit	Annual value Domestic (vtu)	Annualized Volumes	Price	Per unit
Asparagus	540,008	252,163	129	1,950	KG	287,845	144	2,000	KG
Beetroot	1,059,930	1,018,820	1,072	950	KG	41,110	63	650	KG
Bok choy	2,325,307	417,424	759	550	KG	1,907,882	19,079	100	KG
Broccoli	5,414,536	4,792,750	3,423	1,400	KG	621,785	1,131	550	KG
Cabbage	3,500,890	2,487,895	4,523	550	KG	1,012,995	10,130	100	KG
Capsicum	20,318,437	9,120,442	5,700	1,600	KG	11,197,995	11,787	950	KG
Carrot	14,015,210	11,051,348	31,575	350	KG	2,963,862	7,410	400	KG
Cauliflower	9,861,929	9,706,751	10,218	950	KG	155,177	310	500	KG
Celery	896,091	873,829	1,589	550	KG	22,263	67	330	KG
Corn	2,036,763	1,907,154	2,244	850	KG	129,608	648	200	KG
Cucumber	7,562,212	387,976	732	530	KG	7,174,237	28,697	250	KG
Eggplant	1,348,235	0	0	950	KG	1,348,235	6,741	200	KG
Garlic	14,009,288	13,829,936	9,220	1,500	KG	179,352	717	250	KG
Green beans	3,390,028	0	0	0	KG	3,390,028	16,950	200	KG
Leek	1,213,061	1,130,209	1,190	950	BUNCH	82,852	331	250	BUNCH
Lettuce	44,492,016	5,920,801	4,934	1,200	EA	38,571,216	142,856	270	EA
Mushroom	1,383,930	1,383,930	2,129	650	KG	0	0	0	KG
Onion	10,165,197	10,165,197	52,129	195	KG	0	0	0	KG
Peas	11,423,824	11,330,718	3,841	2,950	KG	93,106	517	180	KG
Potato	19,361,249	19,361,249	99,288	195	KG	0	0	150	KG
Pumpkin	2,680,484	0	0	0	KG	2,680,484	12,184	220	KG
Radish	927,278	0	0	0	KG	927,278	3,091	300	KG
Spinach	4,196,999	1,909,513	682	2,800	KG	2,287,486	4,159	550	KG
Squash, summer	265,634	0	0	550	KG	265,634	885	300	KG
Squash, winter	0	0	0	0	KG	0	0	0	KG
Sweet potato/ Kumera	4,764,936	0	0	0	KG	4,764,936	47,649	100	KG
Taro	962,185	0	0	0	KG	962,185	19,244	50	KG
Turnip	303,581	303,581	506	600	KG	0	0	0	KG
Escallots	170,217	170,217	293	580	KG	0	0	1,000	KG
Chili	1,736,872	0	0	0	KG	1,736,872	3,474	500	KG
Total	190,326,329	107,521,904				82,804,424			

Annex 1B – Aggregate data by product for ‘Fruits’

Fruits	Total Annual Spend (Vt)	IMPORTED				LOCAL			
		Annual value Import (vtu)	Annualized Volumes	Price	Per unit	Annual value Domestic (vtu)	Annualized Volumes	Price	Per unit
Apple	10,337,620	10,337,620	18,796	550	KG	0	0	0	KG
Avocado	2,189,873	0	0	0	KG	2,189,873	10,949	200	KG
Banana	11,320,517	0	0	0	KG	11,320,517	70,753	160	KG
Blackberry	3,282,053	3,248,322	2,707	1,200	KG	33,731	34	1,000	KG
Blackcurrant	0	0	0	0	KG	0	0	0	KG
Blueberry	2,653,226	2,653,226	3,538	750	KG	0	0	0	KG
Breadfruit	549,167	0	0	0	KG	549,167	3,432	160	KG
Cantaloupe	3,845,365	3,845,365	4,048	950	KG	0	0	650	KG
Cherry	0	0	0	0	KG	0	0	0	KG
Chinese pear	885,446	885,446	632	1,400	KG	0	0	0	KG
Cranberry	103,452	103,452	103	1,000	KG	0	0	0	KG
Date	1,273,657	1,273,657	1,384	920	KG	0	0	0	KG
Fig	1,026,262	1,026,262	431	2,380	KG	0	0	0	KG
Grapefruit	5,129,673	0	0	0	KG	5,129,673	51,297	100	KG
Grape	3,718,873	3,718,873	2,066	1,800	KG	0	0	0	KG
Guava	732,390	0	0	0	KG	732,390	1,221	600	KG
Kiwi	6,609,221	6,609,221	6,957	950	KG	0	0	0	KG
Lemon	10,134,331	0	0	450	KG	10,134,331	50,672	200	KG
Lime	2,953,976	0	0	450	KG	2,953,976	19,693	150	KG
Mango	3,819,439	0	0	0	KG	3,819,439	12,731	300	KG
Nectarine	0	0	0	1,500	KG	0	0	0	KG
Olive	286,187	286,187	520	550	KG	0	0	0	KG
Orange	4,552,753	3,173,630	5,770	550	KG	1,379,123	6,896	200	KG
Papaya/PawPaw	3,776,836	0	0	0	KG	3,776,836	75,537	50	KG
Peach	1,138,430	1,138,430	759	1,500	KG	0	0	0	KG
Pear	1,391,415	1,391,415	2,530	550	KG	0	0	0	KG
Persimmon	0	0	0	1,200	KG	0	0	0	KG
Pineapple	7,117,051	1,679,796	1,120	1,500	KG	5,437,255	27,186	200	KG
Plum	0	0	0	1,500	KG	0	0	0	KG
Pomegranate	0	0	0	0	KG	0	0	0	KG
Prickly pear	0	0	0	0	KG	0	0	0	KG
Raisin	1,104,123	1,104,123	726	1,520	KG	0	0	0	KG
Raspberry	3,203,804	1,086,147	388	2,800	KG	2,117,657	2,118	1,000	KG
Star fruit	1,128,964	0	0	0	KG	1,128,964	2,509	450	KG
Strawberry	1,172,196	1,172,196	1,563	750	KG	0	0	0	KG
Tomato	50,186,009	12,774,409	10,645	1,200	KG	37,411,600	38,175	980	KG
Watermelon	5,771,946	2,319,025	4,216	550	KG	3,452,921	34,529	100	KG
Coconut	3,709,692	0	0	0	0	3,709,692	98,925	38	0
Total	155,103,947	59,826,800				95,277,147			

Annex 1C – Aggregate data by product for ‘Meats and Dairy’

Meats and Dairy	Total Annual Spend (Vt)	IMPORTED				LOCAL			
		Annual value Import (vtu)	Annualized Volumes	Price	Per unit	Annual value Domestic (vtu)	Annualized Volumes	Price	Per unit
Beef	113,497,891	5,565,660	2,783	2,000	KG	107,932,231	166,050	650	KG
Pork	44,654,675	29,579,466	23,664	1,250	KG	15,075,209	7,955	1,895	KG
Lamb	39,384,017	39,384,017	13,351	2,950	KG	0	0	800	KG
Chicken	221,574,643	53,049,276	39,296	1,350	KG	168,525,368	108,726	1,550	KG
Eggs	57,591,940	1,228,488	1,293	950	Tray 30	56,363,452	56,420	999	Tray 30
Milk	69,620,305	69,620,305	278,481	250	LTR	0	0	0	LTR
Fish	104,410,195	19,216,241	11,618	1,654	KG	85,193,953	85,194	1,000	KG
Crab	13,666,266	91,074	51	1,800	KG	13,575,191	7,542	1,800	KG
Bacon	142,596,942	141,258,537	54,330	2,600	KG	1,338,405	1,487	900	KG
Scallop	4,641,142	4,641,142	4,885	950	KG	0	0	0	KG
Prawns	100,059,338	74,081,701	16,463	4,500	KG	25,977,636	8,958	2,900	KG
Smoked Salmon	10,732,695	10,732,695	1,917	5,600	KG	0	0	0	KG
Cheese	100,630,075	100,630,075	50,823	1,980	KG	0	0	0	KG
Cream	44,238,305	44,238,305	44,461	995	LTR	0	0	0	LTR
Butter	34,018,095	34,018,095	27,612	1,232	KG	0	0	0	KG
Veal	8,171,373	2,192,533	2,193	1,000	KG	5,978,840	8,304	720	KG
Ducks	2,934,621	2,934,621	202	14,500	KG	0	0	0	KG
Lobster	556,566	0	0	0	Kg	556,566	253	2,200	KG
Total	1,112,979,084	632,462,232				480,516,852			

Annex 1D – Aggregate data by product for ‘Herbs’

Herbs	Total Annual Spend (Vt)	IMPORTED				LOCAL			
		Annual value Import (vtu)	Annualized Volumes	Price	Per unit	Annual value Domestic (vtu)	Annualized Volumes	Price	Per unit
Basil	2,936,928	189,738	76	2,500	KG	2,747,190	2,747	1,000	KG
Chives	154,519	15,179	51	300	Bunch	139,340	1,393	100	Bunch
Cilantro/Coriander	1,132,001	53,127	177	300	Bunch	1,078,875	10,789	100	Bunch
Cinnamon - Dried	70,836	0	0	35,500	KG	70,836	47	1,500	KG
Dill	443,984	0	0	0	Bunch	443,984	4,440	100	Bunch
Fennel	0	0	0	8,833	KG	0	0	0	KG
Ginger	826,884	0	0	0	KG	826,884	4,134	200	KG
Spring Green Onion	1,475,450	0	0	0	Bunch	1,475,450	14,754	100	Bunch
Mint	982,629	30,358	101	300	Bunch	952,271	9,523	100	Bunch
Nutmeg - Dried	0	0	0	30,278	KG	0	0	0	KG
Oregano	23,612	15,179	51	300	Bunch	8,433	84	100	Bunch
Paprika	252,959	252,959	25	9,999	KG	0	0	0	KG
Parsley	980,840	22,769	76	300	Bunch	958,071	9,581	100	Bunch
Pepper	675,556	489,343	76	6,400	KG	186,213	155	1,200	KG
Rosemary	27,576	11,554	39	300	Bunch	16,022	84	190	Bunch
Sage	12,649	0	0	0	Bunch	12,649	126	100	Bunch
Thyme	12,228	3,795	13	300	Bunch	8,433	84	100	Bunch
Vanilla	9,884,669	2,529,845	25	100,000	KG	7,354,824	334	22,000	KG
Total	19,893,321	3,613,846				16,279,475			

Annex 2A: List of Hotels/Resorts used as the Total Hotels market (Source: Tripadvisor)

S.No.	Hotel/Resort	Detailed Surveyed (Y/N)
1	Eratap Beach Resort	Y
2	Aquana Beach Resort	
3	The Havana	
4	Tamanu on the beach	
5	The sportsmen's hotel	
6	Lagoon Beach Resort Apartments	
7	Paradise Cove Resort	
8	Holiday Inn Resort Vanautu	Y
9	Vila Chaumiers	
10	Erakor Island Resort and Spa	Y
11	Tranquillity Island Resort and Dive Base	
12	Mangoes Resort	Y
13	Poppy's on the Lagoon	Y
14	The Grand Hotel & Casino (Port Vila – Efate)	Y
15	Hideaway Island	
16	Benjor Beach Club	
17	Breakas Beach Resort (Efate)	Y
18	Warwick Le Lagon Resort (Efate)	Y
19	Sunset Bungalows	
20	Chantilly's on the Bay	Y
21	Iririki Island Resort Vanuatu (Efate)	Y
22	The Melanesian (Port Vila – Efate)	Y
23	Coconut Palms Resort	Y
24	Moorings Hotel	Y
25	Kaiviti Motel	Y
26	Starfish Cove	
27	Tara Beach Resort	
28	Tropicana Lagoon Appartments	
29	Sky Garden Hotel	
30	<i>Crystal Blue Lagoon</i>	
31	<i>Les Alises</i>	
32	<i>Beachcomber Lodge</i>	
33	Sarangkita Luxury Ocean Front Resort	
34	Vanuatu Beachfront Apartments	
35	Nirvana Resort Paradise Cove	
36	Nomads Moorings	
37	Ocean View Appartments	
38	The Terraces Boutique Appartments	
39	Ripples on the Bay	Y
40	Hotel Olympic	

Annex 2B: List of Restaurants used as the Total Restaurants market (Source: Tripadvisor)

S.No	Restaurant	Detailed Surveyed (Y/N)
1	The Stonegrill restaurant	
2	Paradise Cove Restaurant	
3	Elan (changed owner, now Palm Cove Beach Bar and Grill)	
4	The Beach Bar/Mele Beach Bar	
5	Ripples	
6	Restaurant le Jardin des Saveurs	
7	Le Cafe du Village	
8	Chill	
9	Au Peche Mignon	
10	Au Fare	
11	Nambawan Café	Y
12	Jill's Café	Y
13	War Horse Saloon	Y
14	Kesorn's Exotic Thai Restaurant	Y
15	Flaming Bull Steak House	Y
16	Cafe Vila	
17	Island Time Cafe Takeaway	
18	Vila Chaumieres Restaurant	
19	Harbour View Restaurant	
20	The Summit Café	
21	Shiki Restaurant	
22	The Waterfront Bar and Grill	Y
23	Tina's Café	
24	Emily's Cafe & Takeaway	
25	L'Houstalet Restaurant	
26	The Brewery Bar & Restaurant/The Port Bar and Restaurant	Y
27	Kanpai	
28	La Tentation Restaurant	Y
29	Jungle Café	Y
30	Spice Indian Restaurant	
31	La Mer Restaurant	
32	Beef House Grill and Bar	
33	La Casa Restaurant	
34	Seaview Café	
35	Anchor Inn	
36	Daily Snack Vietnamese/Joels Vietnamese	Y
37	Golden Port	
38	Bayanihan	
39	Krishna indian food takeaway	
40	MK Chinese Restaurant	
41	Mai Thai Restaurant & Take Away	
42	Vanuatu Fried Chicken	
43	Ban Thai Restaurant	
44	Lotus Café	

Annex 3: List of Suppliers/Stakeholders interviewed

S.No.	Supplier/Stakeholder	Contact person	Description
1	EcoFresh	Tal Milfirer, Owner	Grow hydroponic vegetables for primarily the Supermarkets, followed by the Hotels and Resorts and then the Restaurant sector. EcoFresh have the ability to grow vegetables year round due to the hydroponic system. EcoFresh currently supply lettuce, red and green capsicums, cherry tomatoes and a small selection of herbs
2	Vanuatu Direct	Cornelia Wyliee, Owner	Have a reputation of knowing their onions. Having developed this sector, their current focus is to support niVanuatu to grow produce that can be sold – whether that is through the Vanuatu Direct network or through the market. They are currently doing a lot of work with contract growers (almost 50 contract growers) from around their farmland largely growing cauliflower, spring onions, tomatoes (year round) and 2kms of sweet corn planted every week, producing 6000+ cobs a week.
3	Vanuatu Agricultural Supplies	Aaron Prendergas Business Development Manager	Currently working with EcoFresh to develop niche products for the domestic market. Also, assists niVanautu growers with crop husbandry advice and managing crop disease.
4	Traverso	Mattiu Bizote, Purchasing Officer	Supplier of fresh produce from Ecofresh and local growers and some imported foods. Traverso do not have any regular orders to supply the hospitality sector, though, they supply regular food (meat) to the Chinese Food outlets. Meat and specialty meats are their principal product line.
5	Farm Support Association	Jill Greenhalgh, Research Advisor Oliver Iatto, Snr Extension Officer	Provides extension support to assist small-holders to establish farming systems (chicken, goats and pigs) and vegetables, fruit and root crop gardens.
6	NuGrow	Dan Dempsey, Owner	NuGrow grow ground crops, usually lettuce, capsicums and tomatoes. Most of the business is with small restaurants
7	Vate Ocean Gardens	Paul Ryan, Owner	Started as a Prawn Farm for domestic market. However with competition issues, they diversified into fish farming, currently breeding Barramundi (4 x species), Red Talapia and Basa fish. Presently all fish is harvested for the Fiji market.
8	Au Bon Marche		One of the largest supplier to the hospitality sector including for products like carrots, onions, potatoes, apples and oranges. Many buyers source produce (fresh and tinned) during off season from them.

Annex 4: Farm Support Association Port Vila Market House Survey Summary – 2014

PRODUCE	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Bean (Long)						No data	No data					No data
Beans (Snake)						No data	No data					No data
Cabbage (Island)						No data	No data					No data
Cabbage (round, green)	No data					No data	No data					No data
Cabbage (Chinese)						No data	No data					No data
Carrot						No data	No data					No data
Cucumber						No data	No data					No data
Dwarf Beans						No data	No data					No data
Eggplant						No data	No data					No data
Kumala (Orange)						No data	No data					No data
Kumala (White)						No data	No data					No data
Lettuce						No data	No data					No data
Manioc (kari)						No data	No data					No data
Manioc (white)						No data	No data					No data
Pineapple						No data	No data					No data
Spring Onion						No data	No data					No data
Taro (Fiji)						No data	No data					No data
Taro (Island)						No data	No data					No data
Tomato						No data	No data					No data
Watermelon						No data	No data					No data
Yam (Soft)						No data	No data					No data
Yam (Strong)						No data	No data					No data

Key:	
	No production
	Small supply

Key:	
	Around average supply
	Good supply