



Food Security in Port Vila, Vanuatu



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Executive Summary

This report examines the state of food security¹ in Vanuatu's capital, Port Vila through a focus on the accessibility (physical and economic) and acceptability (preferences) of fresh, nutritious local food. Historically, the Pacific Islands have been thought of as food secure with rich volcanic soils and high rainfall levels ensuring a plentiful and diversified supply of nutritious, fresh foods. The rapidly expanding urban areas of the Pacific are often neglected in this discourse yet are particularly vulnerable to food insecurity, exacerbated by social and environmental change.

The Islands of Vanuatu sit within the Pacific 'Ring of Fire', characterised by active volcanoes and frequent natural disasters such as earthquakes and cyclones. Due to these threats and its relative capacity to respond, Port Vila is ranked the most vulnerable city in the world to natural disasters.² In 2015/16 the implications of this vulnerability in terms of food security was brought into stark relief in the aftermath of Tropical Cyclone Pam and the subsequent El Nino.³ In Port Vila these events resulted in higher prices and limited supplies of local food and increasing reliance on imported goods. The resulting food insecurity particularly affected some of the most vulnerable members of the urban population: those on low incomes and in informal settlements.⁴ Further climatic change is only likely to increase the frequency and strength of such events, negatively affecting agricultural production and the availability and accessibility of local food.⁵

Changing climatic conditions and natural hazards exacerbate existing social vulnerabilities to food insecurity in urban areas. While available research indicates that Vanuatu currently has enough food to meet the population's calorie requirements⁶, the 'hidden hunger' of malnutrition is a significant concern.⁷ Factors such as rapid urban population growth, high rates of poverty and limited access to land for gardening reduce the ability to access sufficient fresh, nutritious food for many in urban areas. Urban diets have higher proportions of imported foods that are often lower in cost but higher in sodium and fat, and lower in nutrients than locally produced alternatives.⁸ Due to poor diets, Port Vila's population face

¹ The 1996 World Food Summit definition of food security is: "when all people, at all times, have physical, social and economic access to sufficient, safe, nutritious food that meets their dietary needs and food preferences for an active and healthy life".

² Maplecroft, Verisk (2015) "Natural Hazards Risk Atlas." United Kingdom: Verisk Maplecroft.

³ Haviland, Maya (2015) *TC Pam Food Security Survey Summary Report*. Port Vila, Vanuatu: Act for Peace, Vanuatu Council of Churches.

⁴ Wan Smolbag Theatre (2016) *Urban Nutrition Program for El Nino Drought Response: Final Report*. Port Vila, Vanuatu: Wan Smolbag Theatre.

⁵ Barnett J. (2011) Dangerous climate change in the Pacific Islands: food production and food security. *Regional Environmental Change* 11: 229-237.

⁶ Food and Agriculture Organization of the United Nations (FAO). (2017) *FAOSTAT Country Profile: Vanuatu*. Rome: Food and Agriculture Organization of the United Nations. Retrieved from: <http://www.fao.org/faostat/en/#country/155>.

⁷ Martynm T, Yi D and Fiti L. (2015) *Identifying the household factors, and food items, most important to nutrition in Vanuatu*. Vanuatu:

FAO, University of Adelaide and the Government of Vanuatu.

⁸ Ibid.

higher rates of non-communicable diseases (NCDs) and obesity relative to rural areas.^{9 10} The heavy reliance on imported foods also increases the vulnerability of urban populations in the event of international price increases or a decline in key sectors such as tourism as a result of natural disasters, which may impact on the capacity to purchase imported foods. With a significant proportion of Port Vila's population under the 'Basic Needs Poverty Line' and persistent expansion of urban areas, poor nutritional outcomes will continue as long as urban poverty continues to be unaddressed at a government policy level.

In recent years increasing self-sufficiency, and reducing dependence on imported foods, has been identified as critical for food security in Vanuatu in terms of improving population health and resilience to climate change and natural disasters. This has seen the adoption, particularly since the 2009 Pacific Food Summit, of the more holistic definition of food security in government policy, highlighting the need to address issues of access and acceptability of local food as well as increasing production (availability).¹¹¹² To date, however, policy and action to address the particular vulnerabilities of urban populations to food insecurity – in terms of access to and acceptability of local foods – has been limited. While there are indications of some promising changes in this regard^{13 14}, greater attention and action is required to improve food security for this growing sector of Vanuatu's population into the future.

This report draws on empirical research with seven communities across the Greater Port Vila area to identify key barriers and opportunities to improve access to, and acceptability of, local fresh food for urban populations as a key component of improving urban food security. The key findings of this research are listed below, followed by recommendations for policy and action by key development actors.

Key Findings:

1. Food security in terms of sufficient access to fresh, nutritious food is a substantive concern for Port Vila's population.
2. The high reliance of urban populations on purchased food, particularly imported foods, increases the vulnerability to food insecurity particularly in times of natural disaster and increases in international food prices.
3. A lack of arable land to garden was identified as the biggest barrier to consumption of fresh, local food for urban households, indicating the need to support own production of food.

⁹ Dancause KN. (2010) *Modernization and population health: A natural experimental model of health transition in Vanuatu, South Pacific*. PhD Dissertation. Ann Arbor: State University of New York at Binghamton.

¹⁰ Government of Vanuatu. (2010) *Millennium Development Goals 2010 Report: Vanuatu*. Port Vila, Vanuatu: Prime Ministers Office, Government of Vanuatu.

¹¹ Government of Vanuatu. (2016) *National Sustainable Development Strategy 2016-2030*. Port Vila, Vanuatu: Government of Vanuatu.

¹² Government of Vanuatu. (2015) *Vanuatu Agricultural Sector Policy 2015-2030*. Department of Agriculture and Rural Development. Port Vila, Vanuatu: Government of Vanuatu.

¹³ Pers. Comm. Mr Jerry Sampson, Manager Town Planning, Port Vila Municipal Council. 26th January 2018

¹⁴ Department of Agriculture, Vanuatu (2018), Facebook update re: 2018 planning workshop, 23rd January 2018. Retrieved on 25th January from: https://www.facebook.com/Department-blong-Agriculture-Vanuatu-1638942406347986/?ref=br_rs

4. The relatively high price of fresh, local food to imports was identified as another key barrier, highlighting the need to make the purchase of local food more accessible to urban consumers.
5. Convenience, in terms of time to make a garden and time to prepare local food, was also identified as a key barrier to consumption of *aelan kakae* / local food.

Recommendations:

Key recommendations to address urban food security based on these findings are outlined below.

1. Policy and action on urban food security

The findings of this report highlight that food security is a critical issue for urban households in Vanuatu, requiring greater attention from all development actors at both a policy and program level. It also highlights the unique factors that drive food insecurity within urban and peri-urban areas, identifying a range of approaches including policy levers – such as land use zoning and tariffs on imported goods – that could be implemented to facilitate positive change in this area.

2. Increase access to local fresh foods to improve urban resilience in the face of natural disasters and climate change

Port Vila faces threats to food security from natural disasters and climate change. The high reliance on imported food items, limited ability to garden, lack of access to local food for purchase, and limited government capacity to increase import of foods (import-export ratio), make Port Vila's population vulnerable to food insecurity particularly in times of emergency or crisis. Those on lower incomes and in informal settlements are particularly at risk. Greater attention to urban food security is therefore critical for disaster risk reduction in Port Vila. This could include increasing capacity and efficiency of inter-island (re)distribution for emergency response – inclusive of transport and storage solutions to keep produce fresh.

3. Conduct a nutrition-oriented value chain analysis of locally produced food

Further research is recommended to identify barriers and opportunities to develop the supply of local food to urban consumers. The first step would be to identify the type and volume of produce in the urban food markets, its source and cost, accounting for seasonal variability. The next step would be a nutrition-orientated value-chain analysis, to identify opportunities along the food supply chain to enhance the supply of and/or demand for nutritious local foods. Pricing at the urban markets and opportunities to increase efficiencies and reduce costs along the local food supply chain should be a focus of any value chain analysis.

4. Programming to support local fresh food supply to urban consumers

Programming to support the supply of local fresh food to urban consumers needs to be developed, drawing on the research in this report and outlined in recommendation 4. In a similar way to conventional agricultural development or value chain programs, this would

require working with actors along the supply chain - from production, transport, processing, storage, retail or wholesale of local food – to incentivise investment in locally produced and processed foods.

5. Regulatory measures to reduce price: review potentials of tariffs, taxes and price controls

To make local foods more competitive with imported goods regulatory mechanisms must also be reviewed, including price-related measures such as tariffs and taxes on imported goods as well as price controls or subsidies on local food.

6. Engage urban youth in production and sale of locally produced and processed food

Opportunities for youth-orientated initiatives relating to production and sale of locally produced and processed food should also be further explored. High rates of youth unemployment in urban areas create an untapped workforce, and our research on urban communities highlight the role of youth in catalysing community action.¹⁵

7. Supporting the development of urban/peri-urban agriculture

To enable the development of urban/peri-urban agriculture the lack of land to garden can be addressed in a number of ways. At the governmental level, actions to facilitate urban/peri-urban agriculture development include land use mapping, and zoning to protect agricultural lands.

8. Information and education: promoting consumption of local food and alternative means of production and preparation

Providing information and education to urban communities on the value of local food to health is a first step in encouraging greater changes in food choices. More targeted campaigns to address the specific barriers to consumption of *aelan kakae* identified in this research – alternative and more convenient ways to produce and prepare *aelan kakae* – are also recommended.

9. Further food research: Food poverty and household food access

The findings of this report highlight a number of areas that would benefit from further research. This includes further analysis of the extent and nature of food poverty in urban areas, as well as in-depth qualitative analysis of food access at a household level further examining factors identified by the current research such as consumption patterns, as well as gardening, food sharing and inter-island food transfer practices.

¹⁵ World Vision Vanuatu, 2018, *Urban Community Mobilisation for Community Improvement. Port Vila, Vanuatu*, Port Vila: Vanuatu World Vision Vanuatu.

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Affirmations

This report presents the results of the data collected by WSB in October 2016, except where references to other sources, papers and publications are acknowledged. This report is the property of World Vision Vanuatu.

Acronyms

FAO	Food and Agriculture Organisation of the United Nations
NCD	Non Communicable Disease
TC Pam	Tropical Cyclone Pam
WASH	Water, Sanitation and Hygiene
WSB	Wan Smolbag Theatre
WVV	World Vision Vanuatu

Part 1: The Study

Introduction

This report examines the state of food security in Vanuatu's capital city, Port Vila. It follows the 1996 World Food Summit definition of food security as: "existing when all people, at all times, have physical, social and economic access to sufficient, safe, nutritious food that meets their dietary needs and food preferences for an active and healthy life".¹⁶ Urban food security, as discussed in this report, therefore describes not only on the availability (or production) of healthy and nutritious food but also on the ability of the population to economically and physically access these foods as well as the acceptability or preference for these foods.¹⁷

Pacific Islands such as Vanuatu have long been considered food secure with their fertile soils and plentiful rains.¹⁸ However social and environmental changes are threatening the security of these resources, creating unique vulnerabilities in urban areas. Vanuatu has some of the fastest growing urban areas in the Pacific,¹⁹ with Port Vila's growth rate substantially higher than the national average (4% compared to 2%).²⁰ The population within the narrowly defined municipal urban boundary has tripled from approximately 15,000 in 1979²¹ to 51,000 in 2016.²² However, recent population growth has particularly concentrated in the peri-urban regions beyond the small municipal urban boundary.²³ The population of the Greater Port Vila region doubled in the decade preceding 2009 at an annual growth rate of 10.7%.²⁴ The most recent 2016 mini-census indicates that more than 30% of the population of Greater Port Vila now live in the peri-urban areas,²⁵ many in informal settlements.²⁶

Urban areas also face higher rates of poverty relative to rural areas, with an estimated 18% of Port Vila's population living under the basic needs poverty line.²⁷ Indeed the severity and depth of poverty in Port Vila is indicated to be the greatest in Vanuatu.²⁸ The increasing population also reduces the already limited land available for gardening, reducing the capacity for own production of fresh foods. This is particularly challenging for those in informal settlements without security of tenure. The island of Efate overall has some of the

¹⁶ FAO. (1996) Rome Declaration on World Food Security and World Food Summit Plan of Action. Rome: Food and Agriculture Organization (FAO).

¹⁷ Tacoli C, Bukhari B and Fisher S. (2013) *Urban poverty, food security and climate change*. London: International Institute for Environment and Development.

¹⁸ Templeton D. (2012) Food security in East Timor, Papua New Guinea and Pacific island countries and territories. *ACIAR Technical Reports No. 80*. Canberra: Australian Centre for International Agricultural Research, 53.

¹⁹ Storey D. (2003) The peri-urban Pacific: From exclusive to inclusive cities. *Asia Pacific Viewpoint* 44: 259-279.

²⁰ Trundle A and McEvoy D. (2015) *Greater Port Vila Climate Vulnerability Assessment- Full Report (2015)*. Fukuako, Japan: United Nations Human Settlements Programme Cities and Climate Change Initiative.

²¹ Connell J and Curtain R. (1982) The political economy of urbanization in Melanesia. *Singapore Journal of Tropical Geography* 3: 119-136.

²² Vanuatu Statistics Office. (2017) *2016 Post TC Pam: Mini-Census*. Port Vila, Vanuatu: Government of Vanuatu.

²³ Beca International Consultants. (2015) *Urban growth trends report - Port Vila and Luganville: Risk mapping and planning for urban preparedness*. Port Vila, Vanuatu: Vanuatu Meteorological and Geo-hazards Department

²⁴ Trundle and McEvoy (2015), Greater Port Vila, Footnote 20

²⁵ Vanuatu Statistics Office (2017), 2016 Post TC Pam, Footnote 22

²⁶ Storey (2003) The peri-urban Pacific, Footnote 19

²⁷ Vanuatu Statistics Office. (2010) *Household income and expenditure survey*. Port Vila, Vanuatu Government of Vanuatu.

²⁸ Government of Vanuatu. (2010) *Millennium Development Goals 2010 Report*: Vanuatu Prime Ministers Office, Government of Vanuatu.

lowest rates of available land in Vanuatu.²⁹ These factors mean that much of the rapidly expanding population has a limited capacity to access fresh, nutritious food.

The predicted increase of natural disasters and extreme weather events is likely to affect food security across Vanuatu, but will have specific implications for those in urban areas.³⁰ This was highlighted by the effects of Tropical Cyclone Pam (hereafter TC Pam) in 2015 and the El Niño event in 2015/2016 on food security in Port Vila.^{31 32} With crops destroyed in TC Pam and unable to recover in the following El Niño drought, prices of the limited local food available in urban markets increased. This corresponded with an increased consumption of imported foods.³³

The impacts of such natural disasters exacerbate existing vulnerabilities in the Port Vila food system created by changing food habits. The 'nutrition transition' from local to imported food is occurring at faster rates in urban areas,³⁴ increasing the risk of food insecurity in the urban population in two ways. Firstly, in terms of health, imported food consumed in Vanuatu are primarily packaged foods that are high in sodium and fat and lower in nutrients, such as rice, biscuits, tinned meats or chicken wings.³⁵ Imported fresh fruits and vegetables are very expensive, putting them out of reach for the majority of the local ni-Vanuatu population (for example \$26 AUD per kg for broccoli at the supermarket). This makes locally produced fresh food the best nutritional choice.³⁶ The consequence of poor diets in Vanuatu is evident in the high rates of NCDs, which are responsible for an estimated 70% of all deaths,³⁷ and malnutrition resulting in obesity, stunting and undernourishment.³⁸ The health of urban populations, with their high consumption of imported goods, is particularly affected with diets high in sodium and fat resulting in higher rates of NCDs.³⁹

Secondly, reliance on imported foods increases vulnerability to food insecurity with increases in global food prices and natural disasters. Such price increases or shocks are a likely consequence of reduced production or crop failures predicted to result from climate change.⁴⁰ The rising rate of national spending on food imports relative to all exports – from

²⁹ Siméoni P and Lebot V. (2012) Spatial Representation of Land Use and Population Density: Integrated Layers of Data Contribute to Environmental Planning in Vanuatu. *Human Ecology* 40: 541-555.

³⁰ Iese V, Paeniu L, Pouvalu S, Tuisavusavu A, Bosenaqali S, Wairu M, Nand M, Maitava K, Jacot Des Combes H, Chute K, Apis-Overhoff L and Devi A. (2016) *Food Security: Best Practices for the Pacific*. Suva, Fiji: University of the South Pacific.

³¹ Wan Smolbag (2016), Urban Nutrition Program, Footnote 4

³² Haviland (2015), TC Pam Food Security, Footnote 3

³³ Ibid.

³⁴ Dancause KN, Vilar M, Wilson M, Soloway LE, DeHuff C, Chan C, Tarivonda L, Regenvanu R, Kaneko A, Lum JK and Garruto RM. (2013) Behavioral risk factors for obesity during health transition in Vanuatu, south pacific. *Obesity* 21: e98-e104.

³⁵ Martynm et al. (2015), Identifying the household, footnote 7

³⁶ Ibid.

³⁷ World Health Organization. (2013) Vanuatu NCD Risk Factors STEPS report 2013. Suva, Fiji: WHO Government of Vanuatu.

³⁸ Martynm et al. (2015), Identifying the household, footnote 7

³⁹ Dancause (2013), Behavioral risk factors, footnote 34

⁴⁰ IPCC (2014) *IPCC 2014: Climate Change 2014: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]*, Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press.

44% in 1999-2001 to 93% in 2011-2013 – is an indicator of reduced food security, as it potentially reduces the national capacity to absorb rising prices of imports.⁴¹ ⁴² Capacity to purchase imports, however, can be also be supplemented by other elements of the economy such as services and remittances.⁴³ The reliance on imports, and their demand on the national economy, is also potentially problematic in times of natural disaster when requirements for imported foods are likely only to increase – as they did after TC Pam. Natural disasters also often impact on tourism – a key contributor to Vanuatu’s service economy – that in turn can reduce capacity to purchase goods. This was the case after TC Pam when many Ni-Vanuatu in Port Vila were without work while restaurants and resorts were repaired and tourism numbers were low, resulting in high levels of food insecurity identified among low-income groups.⁴⁴

Capacity to continue purchasing current volumes of imported food in the event of price rises and / or reduced economic capacity is important to consider. According to the 2010 Household Income and Expenditure Survey, food already represents 42% of all expenditure for urban households.⁴⁵ This is well above the average expenditure on food in other countries such as Australia, which is 17%.⁴⁶ This brings into question the capacity of households to absorb additional price rises due to global or national factors (i.e. disasters). High rates of poverty in urban areas increase the vulnerability to food insecurity. Low-income groups in urban areas are particularly at risk as they spend a greater proportion of their income on food than those with higher incomes.⁴⁷ ⁴⁸Residents of poorer, informal settlements in Port Vila indicated that their food security situation was still recovering over a year after TC Pam. ⁴⁹

In recent years increasing self-sufficiency, and reducing dependence on imported foods, has been identified as critical for food security in Vanuatu in terms of improving population health and resilience to climate change and natural disasters. This has seen the adoption, particularly since the 2009 Pacific Food Summit, of the more holistic definition of food security in government policy, highlighting the need to address issues of access and acceptability of local food as well as increasing production (availability).⁵⁰ ⁵¹To date, however, policy and action to address the particular vulnerabilities of urban populations to food insecurity – in terms of access to and acceptability of local foods – has been limited. While there are indications of promising changes in this regard, greater attention and action is required to improve food security for this growing sector of Vanuatu’s population into the future.

⁴¹ FAO (2017), FAO STAT Country Profile, footnote 6

⁴² McGregor A, Bourke RM, Manley M, Tubuna S and Deo R. (2009) Pacific island food security: situation, challenges and opportunities. *Pacific Economic Bulletin* 24: 24-42.

⁴³ Ibid.

⁴⁴ Wan Smolbag (2016), Urban Nutrition Program, footnote 4

⁴⁵ Vanuatu Statistics Office (2010), Household income, footnote 27

⁴⁶ ABS. (2017) 6530.0 - Household Expenditure Survey, Australia: Summary of Results, 2015-16. In: Statistics ABo (ed). Canberra: Commonwealth Government of Australia.

⁴⁷ UNDP. (2010) *Vanuatu Hardship and Poverty Report*. Suva, Fiji: United Nations Development Programme.

⁴⁸ Welegtabit SR. (2001) Food security strategies for Vanuatu. *The GCPRT Centre, Working Paper 58*.

⁴⁹ Wan Smolbag (2016), Urban Nutrition Program, footnote 4

⁵⁰ Government of Vanuatu. (2016) National Sustainable Development Strategy. footnote 11

⁵¹ Government of Vanuatu. (2015) Vanuatu Agricultural Sector Policy, footnote 12

Purpose

This report draws on empirical data on food security in Port Vila to present new insights into the state of urban food security in Vanuatu, with a focus on access, stability and acceptability of fresh, nutritious local foods. The purpose is to better understand the particular vulnerabilities of urban and peri-urban areas, and provide recommendations for policy and programs to help increase the resilience of urban populations in the face of increasing social and environmental change.

Increasing access to, and acceptability of, locally produced food, as outlined in the introduction, is a key factor for improving food security in Port Vila. This report conducted primary research with seven urban and peri-urban communities to explore the following key questions relating to food security, with a specific focus on local produce:

1. What do diets comprise of?
2. How are people accessing food?
3. How are food consumption patterns changing?
4. What are the constraints to accessing locally produced foods?
5. How can consumption of locally produced fresh food be increased?

Methodology

This report presents findings on urban food security that formed part of a larger quantitative household survey on urban community mobilisation undertaken by WSB.⁵² A mixed-methods approach was employed, combining quantitative and qualitative research methods. For the purposes of this report, we define “Greater Port Vila” as the area extending from Mele-Maat to Rentapao Bridge, inclusive of Teouma/Eratap. This follows the boundaries set out in the proposed *Port Vila Zoning and Development Control Plan*.⁵³ Within this area, those communities inside the municipal boundary are considered “urban”, with those falling outside being considered “peri-urban”. Seven communities in Greater Port Vila (both municipal and peri-urban) were chosen based on three categories of land tenure status experienced by communities in and around Port Vila: informal settlements (oral arrangement, vacant municipal or *kastom* land), formal settlements (bought, leased or rented), and *kastom* land owners. Three of the communities’ chosen were within municipal Port Vila boundaries, and four were peri-urban. Those communities chosen within the municipal boundaries were: Anabrou Sisivi, Vila North and Freswota 6. Peri-urban communities were: Ewentau (Eratap), Waisisi (Mele), Pango and Teouma Kolta. Communities were also chosen on whether they were primarily populated by people from the same island (three communities), or contained a mix of people from around Vanuatu (four communities). See Figure 1 (below) for details.

⁵² World Vision Vanuatu (2018), Urban Community Mobilisation, footnote 15

⁵³ Pers. Comm. Mr Jerry Sampson (2018), Port Vila Municipal Council, footnote 13

Community inhabitants are from...:	<i>Informal settlements</i>	<i>Formal settlements</i>	<i>Kastom land owners</i>
Primarily one island	Waisisi (Mele) (36 surveyed; 8 focus group participants)	Anabrou (Sisivi) ⁵⁴ (71 surveyed; 12 focus group participants)	Ewentau (Eratap) (52 surveyed; 18 focus groups participants)
A mix of islands	Teouma Kolta (60 surveyed; 19 focus group participants) Vila North (36 surveyed; 12 focus group participants)	Freswota 6 (67 surveyed; 10 focus group participants)	Pango (68 surveyed; 8 focus group participants)

Figure 1: Typology of surveyed urban (municipal and peri-urban) communities in Greater Port Vila.

A proportional representation approach was taken with 20% of each community surveyed, based on participatory community mapping exercises undertaken by WSB. The survey sample (390) fits 95% confidence level at 5% confidence interval for the Greater Port Vila area (based on statistics from the 2016 mini census). In terms of survey method, participants were given free choice of response to avoid biasing responses. Enumerators were instructed to either align these answers with listed responses or record the response in the ‘other’ section. A gender balance of respondents was aimed for, with the final numbers giving 48% male and 52% female. The highest number of participants (23%) were aged 20-24 years, with the second highest age bracket (20%) being 25-29 years. This is reflective of the youth demographic profile of urban Port Vila. The final survey was conducted over two weeks in July 2016, with the focus groups being held over a period of 6 weeks in July/August due to community availability.

Focus groups were conducted in each community. While these focussed primarily on issues relating to community mobilisation, they did provide further insights into issues of water and, to a lesser extent, food security which have been incorporated into this report. Gender balance was aimed for in each group, with a total of 87 participants across the seven communities.

⁵⁴Note: Anabrou-Sisivi, which comprises of people from the village of Sisivi in the island of Ambrym, was the site of the focus group. The survey was conducted across Anabrou.

Part 2: Results

Section 2.1 Understanding Urban Food Behaviours: Diet and Access

This first section of the results presents findings on the type of food accessed by urban populations and then examines how it is accessed.

Consumption Patterns

While available data indicates that Vanuatu has enough food to meet calorie requirements of its population,⁵⁵ food insecurity in terms of malnutrition – inclusive of obesity, stunting and undernourishment – is of great concern.⁵⁶ We therefore first sought to identify the composition of urban diets, asking how often they ate various common food types, including locally grown fresh foods as well as imported foods (rice, tinned meat, tinned fish, soft drinks and sweets).

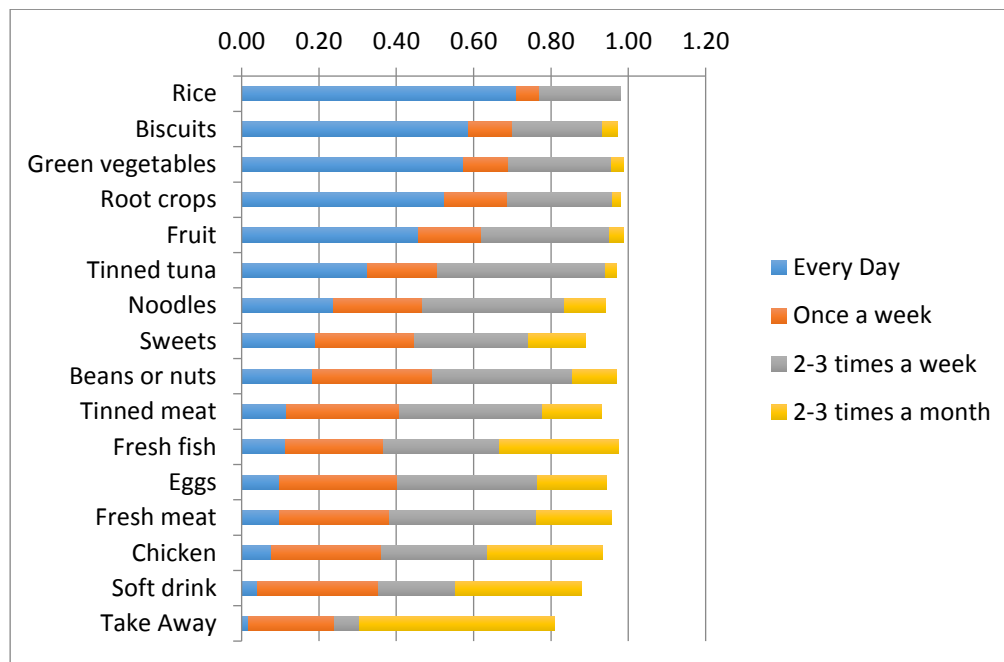


Figure 2: Type and frequency of food consumed

The findings, presented in Figure 2, indicated that 71% of people ate rice every day, making it the most commonly consumed food item, followed by biscuits (59%). These imported foods were closely followed by locally produced fresh foods. Around 53% and 57% of people respectively said they also ate root crops and green vegetables every day, and around 46% ate fruit every day. Protein was eaten less frequently, with the most regularly consumed items being tinned tuna, followed by peanuts or beans and tinned meat. Fresh fish and meat, eggs and chicken⁵⁷ are less regularly consumed.

⁵⁵ FAO (2017), FAOSTATS, footnote 6

⁵⁶ Martynm et al. (2015), footnote 7

⁵⁷ It should be noted that while 'chicken' was included as a broad category in the survey, the main type of chicken consumed in Port Vila is imported from Australia and New Zealand. This chicken is also primarily consumed in the form of chicken wings as they are cheaper, but also higher in fat with little nutritious meat.

It is important to note that the survey did not ascertain the quantity consumed of any of these above items. Therefore, while the data suggests root crops and green vegetables (local nutritious foods) are eaten every day by majority of respondents, the specific proportion of their plate and plate size overall is unknown. Research undertaken by Wan Smolbag on daily diets in the low income, informal urban communities of Blacksands, however, provides an insight into the relative proportions consumed of the different foods. Using a 24-hour recall approach, the findings indicated that meals were dominated by refined carbohydrates (rice, bread or biscuits), with only small quantities of vegetables or protein.⁵⁸ These proportions may change for higher income groups but are likely to be reflective of (at least) the diets of the high percentage of Port Vila's population that are living below the basic needs poverty line (18%).⁵⁹



Figure 3: Alternative protein sources in Port Vila: Imported chicken wings and fresh, locally caught fish

Access

Access to food in terms of food security is defined in terms of both own-production and purchased food (inclusive of local and imported foods). In this section we examine the extent to which urban respondents could access food from various sources, first looking at private gardens and then comparing private, informal and commercial sources of food.

Own- production: Urban/ Peri-urban Agriculture

With subsistence agriculture traditionally providing for fresh food needs, this section examines the extent to which gardens continue to serve as a source of fresh foods for urban residents. When asked if they had a garden, the majority of respondents (over 70%) answered in the positive.⁶⁰ When municipal and peri-urban areas were compared, however, a stark contrast was evident. Almost all respondents from peri-urban areas had gardens (95%), while over half those in the municipal area did not have gardens (56%). Furthermore, within municipal area the distribution of gardens was varied. Approximately 70% of respondents in Anabrou did not have a garden, compared to Vila North where around 75% had a garden and

⁵⁸ Wan Smolbag, Urban Nutrition Program, footnote 4

⁵⁹ Vanuatu Statistics Office (2010), Household Income Expenditure Survey, footnote 27

Freswota 6 where close to half (45%) of the respondents had gardens. These figures indicate that access to food gardens varies substantially, even with the municipal urban area.

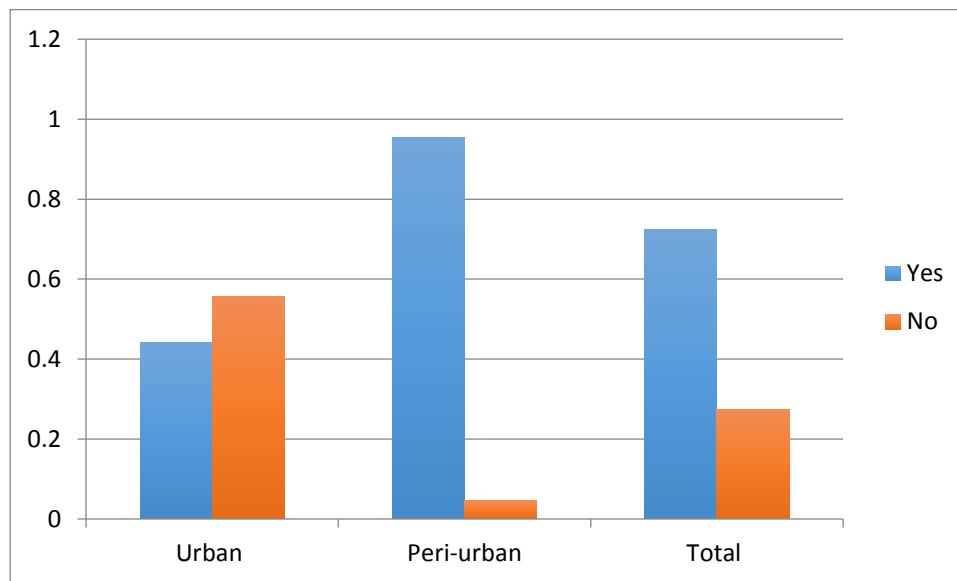


Figure 4: Percentage of population with a garden: urban and peri-urban

As security and ease of access to these gardens is important for ensuring on-going availability and access to fresh foods, people were then asked about their land tenure arrangements. Across the Greater Port Vila area respondents to this question (n=283) indicated that the majority of gardens were on land they owned (56%) followed by land owned by someone else (25%), almost half (48%) of the gardens were within walking distance to their house, followed by at their house (35%). Only 17% had to access their gardens by truck. For those respondents within the urban municipal boundaries who had a garden (n=77), however, gardens were less accessible with over 50% accessing their garden by truck, as opposed to having a garden at their house (31%) or in walking distance (15%).



Figure 5: Gardens and livestock in Vila North

It is also worth noting that the existing level of access to gardens is only likely to be reduced with increasing pressure on limited land resources with the high rates of population growth

in urban and peri-urban areas. While these figures represent access to gardens at the time of the survey, in the focus group discussions almost all communities outlined threats to garden land. In communities such as Pango and Freswota, many residents had gardens on land that was designated for development in the near future. In Ewentau, residents noted that almost all land available for gardening was currently being used, suggesting there would be problems ensuring access to sufficient garden land with continued population growth. In Waisisi they had had to move their gardens further away to accommodate new arrivals. Even in Teouma Kolta, the most outlying area examined in this research, the expanding population and lack of formal land tenure arrangements was resulting in shrinking lot sizes and a reduced capacity to garden.

Food sources: local versus imported

Having examined the relative access to gardens, we then sought to identify which sources, including gardens, informal and commercial sources, respondents obtained the majority of their food from. Our findings indicate that the three main sources of food across all communities are (in descending order): the community store, the market and the garden (see Figure 6).

As local and imported foods are predominantly available from different sources, this data also indicated the reliance on local versus imported sources of food. Local food is primarily available from the garden, the market and 20 Vatu stands (in cooked form as well as fresh). Stores primarily sell imported packaged goods. The supermarket sells fresh food as well as imported packaged goods, but much of this is also imported and sold at very high prices (i.e. 2200 Vatu or \$26 AUD per kilo for broccoli, Jan 2018). It is therefore primarily a source of imported packaged foods. The top 3 sources of food include a mix of both imported and local food sources.

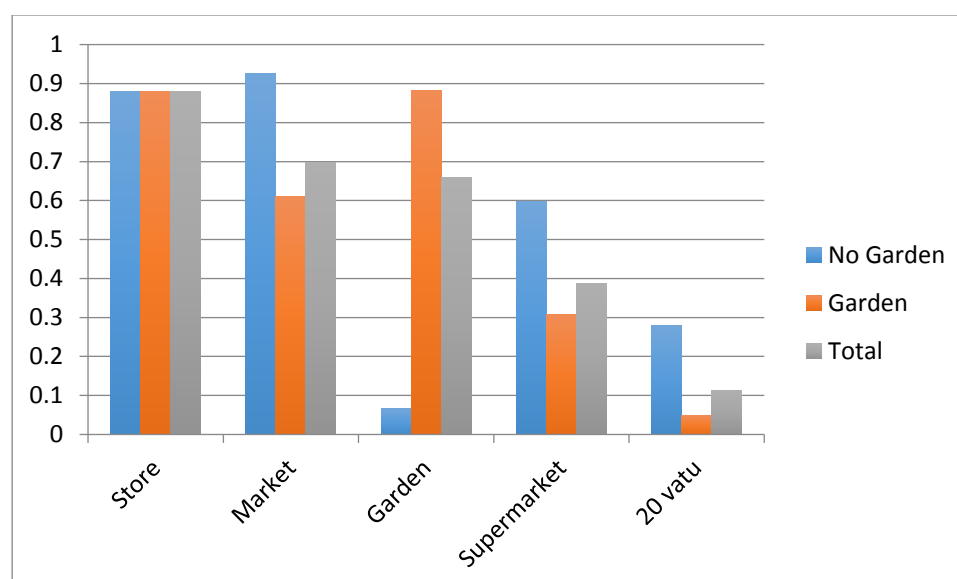


Figure 6: Top 3 sources of food identified disaggregated by household access to garden

The chart above (Figure 6) compares the responses of those who do and do not have gardens, to see how this influences food sourcing. For those that have a garden, the main food sources are the same as the overall response, but in a different descending order: garden, store and market. The garden and the store were identified as the main sources of food (approximately 88% of respondents each), followed by the market (61%). For those that do not have a garden the market is their top food source (92%), followed closely by the store (88%). The supermarket, however, replaces the garden as the third main food source for this group (60%). The market would appear to replace the garden as a source of local food for those without a garden, suggesting that those that do not have a garden are still purchasing locally grown fresh food regularly. This conclusion is also supported by the finding that the '20 vatu' stalls of pre-made local food are also a top source of food for many (28%) of those without a garden.

To better understand the patterns of access to food, people were also asked how often they obtained food from these sources. The main sources of food accessed every day were the store (63% of respondents) and the garden (39%), reinforcing their positions as main sources of food. This was followed by the '20 Vatu' stalls (26%) and food from neighbours (18%). This indicates these smaller, informal sources of food were key to everyday food procurement. It also suggests that the fresh food markets are not a primary source of everyday food, with only 16% indicating they went everyday, it was more regularly accessed 2/3 times a week.

Section 2.2 Levers for change

Having identified what people were eating and how they were accessing it, this section explores influences on consumption of local fresh food, to identify potential levers to support consumer behaviour change.

Garden

Urban/Peri-urban agriculture is considered to improve food security and dietary diversity. To examine the impact of a garden on dietary composition in Port Vila, we compared the consumption of those with and without a garden. Those who had a garden ate substantially more root crops and relatively more green vegetables, less rice and less sweets than those that didn't have a garden. The consumption of biscuits⁶¹, however, was relatively similar. This suggests that having a garden is likely to have a positive influence on consumption of local fresh foods and in reducing consumption of imported goods in the form of rice and sweets.

⁶¹ Biscuits were included in the survey as a broad category, and will be a mix of sweet biscuits and savoury 'breakfast crackers'. However the previous findings from WSB outlined above suggest that this category is likely to be primarily comprised of breakfast crackers

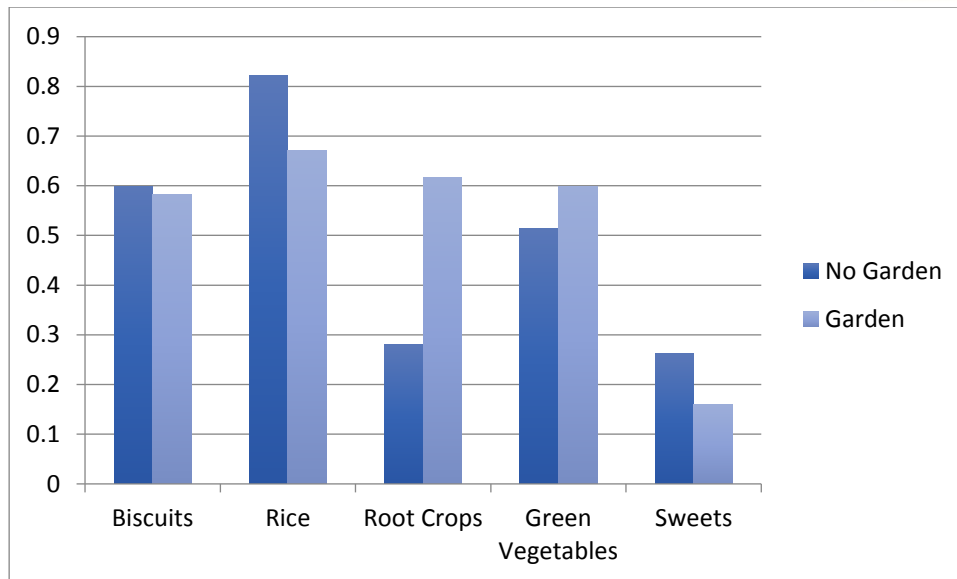


Figure 7: Dietary composition depending on access to gardens

Drivers of food choice

Respondents were then asked to identify why they ate the foods they did. In response 41% of people said it was because it was ‘healthy’, followed by ‘cheap’ (31%), easy to obtain (27%) and easy to prepare (21%). To gain greater insight into how these statements correlated with dietary choices, we then examined the dietary composition of those who stated they ate they food they did because it was healthy compared with those who said they ate it as it was cheap. As this was a multiple-choice question, the data below reflects only the responses of those who made a singular choice i.e. ‘healthy’ (n=77) or ‘cheap’ (n=39) to allow for a clear comparison.

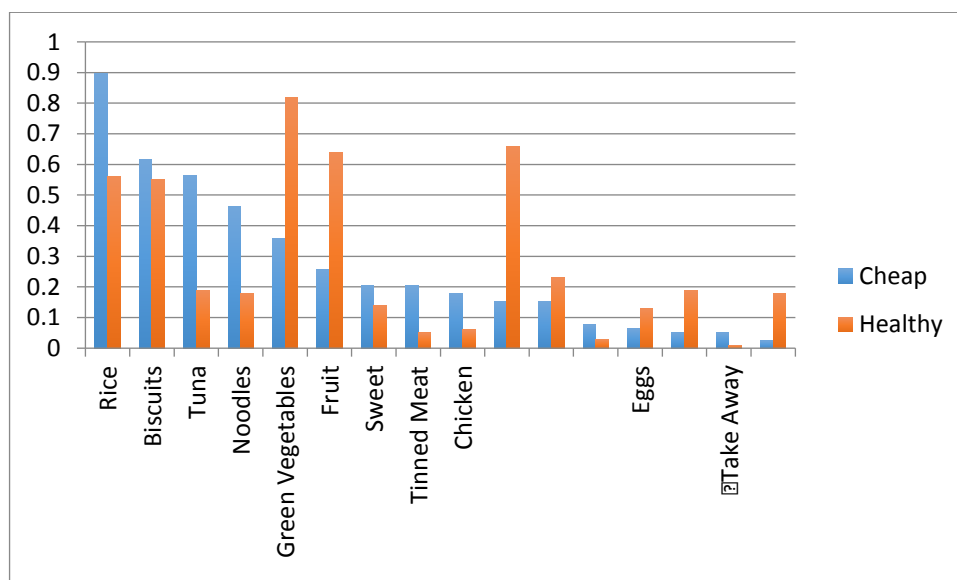


Figure 8: Comparison of food choices: ‘Cheap’ versus ‘Healthy’

The comparative charts above illustrate clear differences in the dietary composition of those who made food choices based on 'health' and those who made food choices on 'price'. Overall, those that made food choices based on price also ate more imported, processed foods that are high in sodium and fat and relatively low in nutrients, while those that made choices based on health ate more locally grown fresh foods. These findings suggest respondents have an understanding of what constitutes 'healthy' food. They also indicate that 'price' is a key influence in the relative consumption of imported foods to local fresh foods. Given that 18% of Port Vila currently lives under the poverty line it is likely that poor nutritional choices will continue to be made as long as urban poverty is unaddressed at a government policy level.

Increasing consumption of local food

When people were asked what would help them eat more *aelan kakae*,⁶² the main factor identified was ground for a garden, followed by time to make a garden and then cost. These responses suggest that people viewed the ability to produce their own food as the greatest opportunity to increase their consumption of *aelan kakae*. The importance of available land to facilitate own production is highlighted, but also the issue of time as a constraint for urban populations, suggesting that convenience is another factor in food choices. That affordability was the third highest response also highlights the importance of price in accessing local foods.



Figure 9: Relative importance of factors influencing consumption of aelan kakae

⁶² It should be noted that in this question the term 'aelan kakae' or 'Island Food' was used rather than locally grown fresh food. There may have been some respondents that interpreted this strictly as root crops or traditional fresh foods.

When the responses between those with and without a garden were compared clear differences were evident. The top choices for those without a garden were 'ground for a garden' (53%) followed by 'price' (41%). For those with a garden the top factors were 'time to make the garden' (33%) and 'ground for a garden' (28%). This indicates that even for those with a garden, having more space to garden and more time to garden would improve their consumption of local food. They also indicated factors such as time to prepare and price as having an influence, indicating that convenience and financial capacity to purchase local food is a factor even for those who have gardens.

Part 3: Discussion

This research sought to identify the barriers and opportunities to increasing access to and acceptability of fresh local foods for urban food security. The consumption of local fresh food, and relative consumption of imported foods, was used as a key indicator of urban food security, as it contributes to population health as well as increases self-sufficiency in times of natural disasters, climate change and international price fluctuations. Findings from this research provide insights into the urban food system including what people are eating and how they are accessing food as well as identification of factors that may increase consumption of *aelan kakae*. These insights, and their implications for policy and action, are discussed below.

Our research found that the urban population were consuming significant amounts of imported foods, particularly packaged foods that are cheap and higher in sodium and fat, as well as local fresh foods. This is a key distinction from the rural, largely subsistent, population, which tends to rely much more on locally produced foods – while cash poor, they are resource (or subsistence) rich. For urban and peri-urban communities in Port Vila people face the double bind of being cash poor as well as resource (land) poor. Not only are diets dominated by imported foods in everyday life, urban populations don't have access to a diverse, nutritious supply of local fresh food, in both everyday life and disaster response or recovery. The key barriers to increasing access to, and acceptability of, local fresh foods identified by respondents – land, price, supply and convenience - are discussed below, along with potential opportunities to address them.

Land

Access to a garden was found to be an important factor to support an increased consumption of local foods. This was identified through comparison of the diets of those with and without a garden as well as by respondents themselves, as the most important factor in their ability to access *aelan kakae*. These findings suggest that supporting the development of non-commercial urban and peri-urban agriculture is likely to help urban consumers increase their access to and consumption of fresh food.

In terms of further development of private gardens that are accessible to urban populations – urban/peri-urban agriculture – a key barrier identified was the availability of land. For the large proportion of Port Vila’s population who have migrated from elsewhere, and do not have customary land on Efate, this land must be rented from the government or, outside of the municipal boundaries, from other customary landowners. The rapid growth of informal settlements in peri-urban areas around Port Vila is putting increasing pressure on available land. There is limited land available for farming, not just close to the city but also on the island of Efate (on which Port Vila is located) as a whole.⁶³ This suggests that people cannot simply farm further out from the city as a solution to the lack of land in urban areas. More long-term, comprehensive action is required such as incorporating agricultural land protection into planning processes for both the municipal and peri-urban regions. This may include zoning for agriculture and/or providing incentives to retain or turn land to agricultural production. There are indications of positive action in this regard, with the Department of Lands, the Department of Local Authorities, Shefa Provincial Government Council and the Port Vila Municipal Council initiating planning processes for the greater Port Vila region in 2017, with zoning for agricultural land a key concern.⁶⁴ These plans are still to be gazetted at the time of writing, and such an initiative will have to balance out the needs for housing of a growing population with the needs for agricultural land.

The approach of Anabrou Sivisi, the community who indicated they had almost no access to garden land, highlights another potential solution to the lack of available land. The community, which owns their land in Anabrou, had recently started charging their residents what was considered a high rent (6,000 vatu a month per household). This money was then being saved by the community council with the aim of paying for new land elsewhere that could include space for gardens. While this specific option may not work for each community, variations of this could be explored as a way to facilitate the ownership or leasing of land for gardens.

Access: Price and Supply

The importance of convenience and cost for respondents, however, indicate the reliance on purchased foods in urban areas. This suggests that gardens alone are not likely to ensure urban food security. This conclusion is supported by international research on urban food security in developing countries.⁶⁵ The changing consumption patterns associated with urbanisation – such as the reliance on purchased goods (both locally produced and imported) evident in Port Vila – result in the need to address other aspects of economic and physical access – particularly in terms of the relative affordability of local food to imports – and

⁶³ Siméoni and Lebot (2012), Spatial representation, footnote 29

⁶⁴ Pers. Comm. Mr Jerry Sampson (2018), Port Vila Municipal Council, footnote 13

⁶⁵ Battersby J, Haysom G, Kroll F and Tawodzera G. (2015) Looking beyond urban agriculture: Extending urban food policy responses. *Technical Report* Cape Town: University of Cape Town.

acceptability (food preferences) in terms of factors such as the relative convenience of imported food to purchase and prepare.

Addressing access to local food, and in particular the key factor of price, requires additional attention to the supply of local food for purchase in the urban area. To date, agricultural development programs and policies have largely focussed on commercial production of cash and traditional crops for export or 'agri-tourism' to supply the domestic tourism market.⁶⁶ This report argues that additional attention is required to make locally produced and processed food more accessible, particularly in terms of price, to the domestic urban consumer market. Such an approach to the local food supply chain could improve the value of locally produced foods for both producers and urban consumers.⁶⁷

Developing and supporting the local supply chain for fresh food to urban consumers is also important in increasing resilience of urban food systems in the face of natural disasters and climate change. During emergency response and recovery periods the availability of local foods at the market is reduced, resulting in higher prices and increased reliance on imported foods. In the aftermath of TC Pam and the subsequent El Nino event in 2015/16 these factors resulted in food insecurity for affected areas, but particularly for poorer urban households.⁶⁸

While the high rate of imported food consumed is clearly problematic for urban and peri-urban communities, this is often the only food available in the aftermath of a natural disaster such as a cyclone. However, Vanuatu's capacity to ensure the supply of even this food source is currently uncertain as the country moves towards a state of high food insecurity in terms of its ratio of food imports to exports.⁶⁹ The government's capacity to purchase increased imported foods during emergency response is therefore at risk, made worse by the typical economic downturn in terms of exports and services (particularly the primary services industry, tourism) experienced after a natural disaster. Furthermore, increases in prices of imported foods through national processes, such as the increase of the Value Added Tax from 12.5% to 15% in January 2018, make them less affordable for urban populations. Addressing urban food security therefore requires improving the supply of affordable fresh foods to the urban market (market houses, stores, supermarkets, 20 Vatu), including in times of disaster (from unaffected areas to affected areas).

A key area for exploration in improving supply to urban markets, particularly in times of natural disasters and climate change, is inter-island (re)distributions. World Vision's response to Tropical Cyclone Pam in March 2015 provides a useful case study (See box below for details). Pam destroyed crops and gardens of affected islands, and with a decrease in tourism

⁶⁶ See for example: Government of Vanuatu. (2016) Vanuatu Agri-tourism Plan of Action, Port Vila, Vanuatu: Government of Vanuatu and NZ AID.

⁶⁷ Hawkes C and Ruel MT. (2011) Value Chains for Nutrition. *2020 Conference Brief*. International Food Research Institute: Washington D.C.

⁶⁸ Wan Smolbag (2016), Urban Nutrition Program, footnote 4

⁶⁹ FAO (2017), FAOSTAT, footnote 6

Cyclone Pam response: Improving access to local food.

To address the shortage of nutritious food available to families devastated by TC Pam, World Vision Vanuatu partnered with local Community Based Organisation, ACTIV (a fair trade organisation), and a New Zealand based NGO, Pacific Voyagers. Pacific Voyagers manages seven ocean voyaging canoes, called “Vaka Moana” (boat of the ocean). Pacific Voyagers seeks to use traditional Pacific sailing methods, combined with modern science, to promote a more sustainable future, to raise awareness on climate change, and to revive the cultural traditions of voyaging. Pacific Voyagers offered the use of one of their vaka’s, OKEANOS, for six weeks free of charge for this initiative.

This initiative worked to improve access to island food and cyclone resilient crops. World Vision used Cyclone Pam response grant funding to contract ACTIV to purchase 32 tonnes of local fruit and vegetables such as taro, manioc and grapefruit from unaffected islands and use the Okeanos vaka to distribute the fresh food equitably to communities in affected provinces whose health was at risk due to a lack of fresh food and vegetables. The use of Okeanos was particularly important during the first months after the cyclone when many communities were still inaccessible by both air and sea to traditional types of transport. Cyclone resistant crop cuttings, such as wild yam, were also distributed at this time to encourage communities to replant with resiliency in mind.

More than 46 t of food were distributed in 15 islands affected from Shefa and Tafea provinces. 11,691 people were reached receiving an average of 4 kg of fresh traditional root crops and fruits from producers groups from Santo, Malekula and Ambae. While post Cyclone Pam, in World Vision target communities only six Red MUACs (measurement of upper arm circumference – a medically sound way of measuring nutritional status in children under five) were recorded.

and markets, there was an abundance of fresh produce going to waste on unaffected islands, also impacting the income of small-scale farmers. In partnership with ACTIV Association and Pacific Voyagers, World Vision Vanuatu linked small scale farmers whose crops and gardens were unaffected by Tropical Cyclone Pam with communities in Penama, Tafea and Shefa who were left without access to fresh produce and were forced to rely on emergency food rations consisting of rice, noodles and tinned meat. This case study illustrates the potential of inter-island trade to address food insecurity in times of disaster but also to improve the food supply to the urban market throughout the year.

Convenience

Convenience, in terms of time to prepare local foods, was another key factor limiting consumption of local foods for urban communities. Imported food such as rice and noodles, for example, take less time to prepare than traditional recipes such as *laplap*. Increasing the acceptability of local food therefore also involves making it an ‘easier’ choice for urban consumers. This could involve innovative approaches to meal preparation (from household

gender analysis, to more efficient cooking equipment) and cooking recipes that utilise locally produced foods (cook books and demonstrations).

Respondents also indicated that the time to make a garden was an important factor in increasing consumption of *aelan kakaē*. This response requires further investigation. While urban residents are likely to be more 'time-poor' due to greater participation in the cash economy, the high rates of unemployment mean that there is also a lot of potentially available labour for farming. That it does take time and effort to make and maintain a garden compared to the relative convenience of purchasing imported foods may mean that people are choosing not to grow food as it takes more time than imported goods rather than simply not having enough time. The incentive or desire to garden is potentially a greater driver here, particularly among the youth demographic, with research noting a lack of interest in agriculture among Pacific Island youth.⁷⁰

⁷⁰Secretariat of the Pacific Community. (2010) *Pacific Youth In Agriculture*. Secretariat of the Pacific Community: Suva, Fiji.

Part 4: Recommendations:

The recommended policies and actions to address access and acceptability of local fresh foods are summarised in the following figure (Figure 10) and discussed in detail in the following list of recommendations.

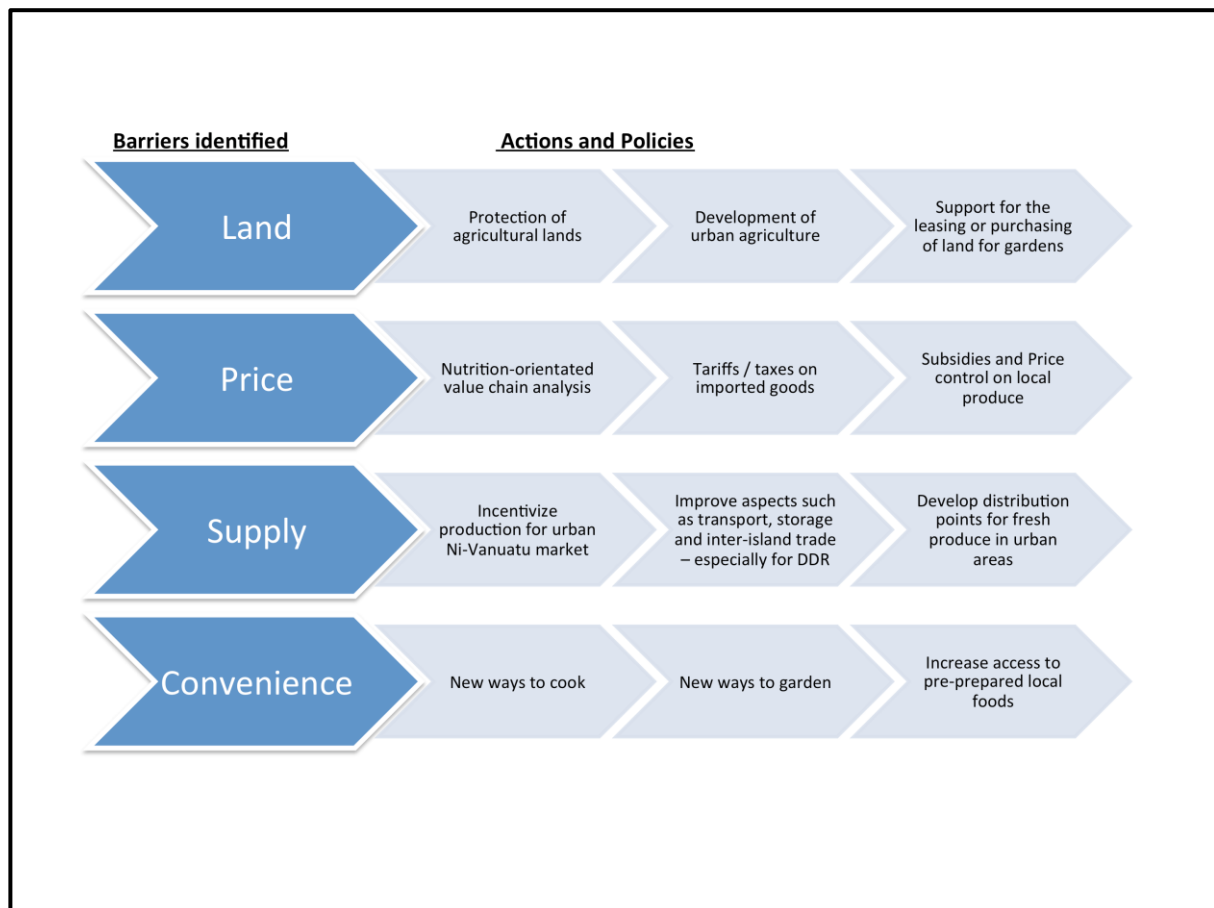


Figure 10: Policy and Action to increase access and acceptability of local nutritious foods

1. Develop policy and action on urban food security

The findings of this report highlight that food security is a critical issue for urban households in Vanuatu, requiring greater attention from all development actors at both a policy and program level. It also highlights the unique factors that drive food insecurity within urban and peri-urban areas, identifying a range of approaches including policy levers – such as pricing measures – that could be implemented in a suite of policies to facilitate positive change in this areas. As improving food security requires action in a range of policy areas, a multi-faceted, multi-sectoral approach is required. To this end, actions outlined in recent food-related policies^{71 72 73} should be fully implemented to provide a basis for urban-specific policy

⁷¹ Government of Vanuatu. (2016) National Sustainable Development Strategy, footnote 11.

⁷² Government of Vanuatu. (2015) Vanuatu Agricultural Sector Policy, footnote 12

⁷³ Department of Agriculture and Rural Development. (2017) Vanuatu National Fruits and Vegetables Strategy 2017-2027. Port Vila, Vanuatu: Government of Vanuatu.

and action outlined in this report. Attention to urban food security should incorporate other urban areas such as Luganville in Santo as well as Port Vila.

2. Increase access to local fresh foods to improve urban resilience in the face of natural disasters and climate change

This report has highlighted the threats to food security in Port Vila in terms of natural disasters and climate change. The high reliance on imported food items, limited ability to garden, lack of access to local food for purchase, and limited government capacity to increase import of foods (import-export ratio), make Port Vila's population vulnerable to food insecurity particularly in times of emergency or crisis. Those in lower income and informal settlements are particularly at risk. Greater attention to urban food security is therefore critical for disaster risk reduction in Port Vila. This could include increasing capacity and efficiency of inter-island (re)distribution for emergency response – inclusive of transport and storage solutions to keep produce fresh.

3. Conduct a nutrition-oriented value chain analysis of locally produced food

Addressing access to local food, and in particular the key factor of price, requires additional attention to the supply of local food for purchase in the urban area. The findings from our research suggests there is a demand for local food but that greater attention is required to making locally produced food more accessible, particularly in terms of price, to the domestic urban consumer market.

Further research is recommended to identify barriers and opportunities to develop the supply of local food to urban consumers. The first step would be to undertake an analysis of the urban fresh food markets, including: identify the type and volume of produce sold, its source and cost, accounting for seasonal variability. This analysis would indicate the current food supply available to urban consumers, and could provide a baseline for supply chain interventions as well as identify key issues and opportunities for further projects. The need for more detailed market analysis as the basis for policy formation is supported by preliminary research by the FAO.⁷⁴

The next step would be a nutrition-orientated value-chain analysis, to identify opportunities along the food supply chain to enhance the supply of and/or demand for nutritious local foods.⁷⁵ There are a wide range of measures that can be undertaken to achieve this objective, including reducing food waste, nutrition education to increase demand (also addressed in recommendation 8) and improved transport, storing and processing of

⁷⁴ Mael JT. (2011) *Vanuatu Domestic Market Study: The potential impact of increased tourist numbers on the domestic market for selected fresh vegetable produce*. Food and Agricultural Organization of the United Nations

⁷⁵ FAO. (2017) How can value chains be shaped to improve nutrition? *Global Forum on Food Security and Nutrition*. Rome: Food and Agriculture Organization of the United Nations.

traditional foods. Undertaking such an analysis in Vanuatu would allow for the further identification of country specific levers to improve the supply and demand for nutritious local foods. This research highlighted the importance of price as a factor influencing the demand for local food. Therefore a value chain analysis should pay particular attention to identifying the factors affecting pricing at the urban markets and opportunities to increase efficiencies and reduce costs along the local food supply chain. The variations in price between the central markets in Port Vila and those in regional centres such as Luganville (Santo) and Lenakel (Tanna), as well as those within the Greater Port Vila area, indicate the need for greater analysis of pricing processes. Initial supply chain research could provide a basis for the development of a nutrition-orientated value chain analysis.^{76 77}

4. Programming to increase local fresh food supply to urban consumers

Programming to increase the supply of local fresh food to urban consumers needs to be developed, drawing on the research in this report and outlined in recommendation 3. In a similar way to conventional agricultural development or value chain programs, this would require working with actors along the supply chain – from production, transport, processing, storage, retail or wholesale of local food – to incentivise investment in locally produced and processed foods.

Examples from the findings in this report include the opportunity to develop and promote alternative points of distribution for local food in Port Vila. One area of focus could be on community stores, which were found to be the main outlet where urban consumers purchased their food. In addition, '20 Vatu' roadside stalls already predominantly serve local food – fresh fruits, vegetables and cooked foods using local ingredients – and provide a source of convenient and affordable nutritious food for urban consumers. While these stalls originated largely to service kava bars they can now be seen operating independently in areas such as Freswota. The significance of these stalls as sources for sale of local produce is highlighted by the findings of a 2011 FAO study that estimated that kava bars accounted for 35% of purchases of fresh produce in Port Vila by the food services sector. Opportunities to work with vendors should be explored to organise their stalls, formalise supply chain connections, and increase both income received and nutritious food sold. These stalls also present a vehicle for the trial and dissemination of new methods of preparing local food (recommendation 7). As these vendors are primarily women, such a program could have a gender-specific orientation in assisting women developing food businesses. Such a program is also recommended by international research on urban food security⁷⁸; as well as called for by female participants in our Port Vila based research.⁷⁹

⁷⁶ UN Women. (2009) Vanuatu Markets Profile *Partners to Improve Markets (PIM)*. Suva, Fiji: UN Women.

⁷⁷ Department of Agriculture and Rural Development. (2017) Vanuatu National Fruits and Vegetables Strategy, footnote 76

⁷⁸ Seidenbusch E, Villamarin F, McMahon D, Husain S and Islam S. (2018) The urban agenda: Meeting the food and nutrition security needs of the urban poor. The Hague, Netherlands: SNV.

⁷⁹ World Vision Vanuatu (2018) Urban community mobilisation, footnote 15

It is also worth noting that when combined with the purchases of local institutions (23%), the findings of the FAO report indicated that the domestic rather than the tourist market accounted for the majority of fresh, local produce purchased by commercial institutions (with hotels accounting for 23% and hotels 19%).⁸⁰ These figures further highlight the value of further analysis of opportunities to develop and strengthen locally oriented supply chains.

Another opportunity is working with local food manufacturing companies, such as Lapita Cafe, that are developing processed and/or pre-prepared foods using local nutritious ingredients. As the time to prepare local foods was identified as a key barrier to consumption, assisting companies to develop affordable, convenient alternatives to imported foods is a means to address this barrier.

5. Regulatory measures to reduce price: review potentials of tariffs, taxes and price controls

To make local foods more competitive with imported goods regulatory mechanisms should also be reviewed, including price-related measures such as tariffs on particular imported goods. Taxes on particular items such as sugar-sweetened beverages, which have been successfully implemented in countries such as Mexico,⁸¹ should also be explored and debated.⁸² However, care must be taken to ensure such measures do not have a regressive effect on low-income groups who are particularly vulnerable to price increases. Concerns about the recently increased Value Added Tax on the cost of imported foods illustrates that if there is only an increase on imported foods, then it is likely to particularly penalise those who rely on cheaper imported foods. To incentivise a shift from imported to local foods such regulatory measures could be implemented in conjunction with approaches such as price controls and/or subsidies on local staple crops – such as root crops – to regulate prices in the local food markets. A combination of taxes to increase the prices of imported foods combined with subsidies to make local food more affordable is a strategy that has been identified in international research as effective in encouraging changes in food choices.⁸³ This has particular relevance for food access in times of natural disaster when prices can escalate dramatically, as occurred after TC Pam.

6. Engage urban youth in production and sale of locally produced and processed food

Opportunities for youth-orientated initiatives relating to production and sale of locally produced and processed food should also be further explored. High rates of youth unemployment in urban areas create an untapped workforce, and our research on urban

⁸⁰ Mael, (2011), Vanuatu domestic market, footnote 74

⁸¹ Colchero MA, Molina M and Guerrero-López CM. (2017) After Mexico Implemented a Tax, Purchases of Sugar-Sweetened Beverages Decreased and of Water Increased: Difference by Place of Residence, Household Composition, and Income Level. *The Journal of Nutrition* 147: 1552-1557.

⁸² Snowdon W and Thow AM. (2013) Trade policy and obesity prevention: Challenges and innovation in the Pacific Islands. *Obesity Reviews* 14: 150-158.

⁸³ Kaplin L and Thow AM. (2013) Using economic policy to tackle chronic disease: options for the Australian Government. *Journal of Law and Medicine* 20: 604-620.

communities highlight the role of youth in catalysing community action.⁸⁴ Increasing youth participation in agriculture has also been identified by the Secretariat of the Pacific Community as an important target for development of the agricultural sector.⁸⁵ Examples from WSB including the training of youth in food preparation during the 'urban nutrition program' following TC Pam and the El Nino event in 2015/16 could be built upon in this regard.⁸⁶

7. Supporting the development of urban/peri-urban agriculture

To enable the development of urban/peri-urban agriculture the lack of land to garden can be addressed in a number of ways. The respective governing bodies for the peri-urban and urban areas should explore relevant actions to facilitate urban/peri-urban agriculture development including opportunities to make land for gardens accessible and affordable for the urban population. Proposed plans to protect agricultural land in the Greater Port Vila area through zoning should be implemented in full, with adequate provisions put in place to allow for the monitoring and enforcement of this zoning.

Additional measures to incentivise leasing for agricultural production could also be explored in this regard, such as through subsidies or reductions in other fees and charges. There are also options such as 'tradable development rights' whereby those developing housing subdivisions in peri-urban areas pay an additional levy, which is then used to subsidise the retainment of other agricultural land. Further options include the designation of agricultural parks, which can be created when government or private enterprise buys or leases land and then sub-leases to farmers to ensure security of tenure. Increasing consumer demand for local food (through measures outlined in recommendations 4,5 and 8) is also likely to have a positive flow on affect in terms of public support for the protection of agricultural land.

Communities – particularly in urban areas where land is limited – could also be encouraged to plan for and protect areas for gardens, including the development of community gardens and/or allotments. At the household scale intensive gardening measures, such as container or vertical gardens, represent opportunities for increasing production with limited land. As these forms of urban agriculture – community gardens and container/ vertical gardens – are new to Vanuatu and differ from traditional gardening patterns it is unclear how successfully they would be. It should be expected that education and training would be necessary as well as ongoing monitoring and support for any pilot projects.

⁸⁴ World Vision Vanuatu (2018), Urban Community Mobilization, footnote 15

⁸⁵ Secretariat of the Pacific Community (2010), Pacific Youth, footnote 70

⁸⁶ Wan Smolbag (2016), Urban Nutrition Program, footnote 4

8. Information and education: promoting consumption of local food and alternative means of production and preparation

Providing information and education to urban communities on the value of local food to health is a first step in encouraging greater changes in food choices. More targeted campaigns to address the specific barriers to consumption of *aelan kakae* identified in this research are also recommended. Participants identified the time to make a garden and time to prepare local food as two key barriers to greater consumption of local produce. In terms of preparation, traditional *aelan kakae* is very time consuming to prepare in comparison to imported food such as rice or noodles. WSB has been very successful in developing new recipes using local ingredients that reduce preparation time. Educating consumers on such alternative approaches to cooking local produce through informational campaigns and cooking demonstrations linked into educational institutions (such as schools) and culinary training institutions.

In terms of time to make a garden, a challenge for those involved in the cash economy, a range of options are available. This includes information and education on intensive agricultural techniques and use of different varieties. Projects such as school gardens have been proven internationally as a vehicle for food education providing demonstration gardens and can be combined with cooking classes and other nutrition related education measures.⁸⁷ Collaboration with, and support of, organisations such as Vanuatu Slow Food already working in the promotion of local foods is recommended. It should be noted, however, that information and education campaigns alone are unlikely to change behaviour and should be used in conjunction with other actions such as those already outlined.⁸⁸

9. Further food research: Food poverty and household food access

The findings of this report highlight a number of areas that would benefit from further research. One such area would be the extent and nature of food poverty in urban areas, including Luganville as well as Port Vila. The research presented in this report and previous small-scale research by WSB highlight the influence of affordability on diet. Further attention to food poverty – in terms of levels of hunger and inability to meet nutritional requirements – would be valuable as the basis for policy and action on this issue. Research options include a household survey following international models such as the CHIPP (the community childhood hunger identification project hunger index) to obtain quantitative figures on the level of urban food poverty.

To obtain a more in-depth understanding of food access issues identified in this report, further qualitative research could be undertaken into issues such as dietary composition -

⁸⁷ Hawkes C, Smith TG, Jewell J, Wardle J, Hammond RA, Friel S, Thow AM and Kain J. Smart food policies for obesity prevention. *The Lancet* 385: 2410-2421.

⁸⁸ Garnett T, Mathewson S, Angelides P and Borthwick F. (2015) *Policies and actions to shift eating patterns: What works?* University of Oxford: Food Climate Research Network, Chatham House: The Royal Institute of International Affairs.

including food diaries to identify the proportions of different food are consumed - as well as the role of food sharing and inter-island food transfers in urban food security.

With the importance of gardens as a means to access fresh food identified within this report, further research on gardening practices could be undertaken to identify barriers and opportunities for increasing urban/peri-urban gardening. This could incorporate gardens for commercial as well as for household purposes. In terms of household gardens, gardening practises could be examined across different income groups but with a particular focus on the urban poor and those in informal settlements. This data may also assist in supporting the promotion of alternative approaches to gardening – such as container gardens or community gardens, as outlined in recommendations 7 and 8.

Appendix A: Survey Questions

1. Do you have a (food) garden?
2. If Yes, is it?
 - At your home?
 - Walking distance to your home?
 - Do you have to drive to it? If so, how long? _____
3. Is it on:
 - Land you own
 - Rented from someone else
 - On community land
 - On government land
4. What are the three main places you get your food?
 - Supermarket
 - Private shop
 - Co-operatives
 - Take-away
 - Market
 - 20 vatu
 - Garden
 - Food aid
 - Food sent from family in Island/ home community
 - Shared meals with neighbours
 - Food from your neighbour's garden
 - Community food kitchen
 - Borrow from others in community
 - Other?
5. How often do you eat the following foods:

	Every day	2-3 times a weeks	1x a week	2-3 times a month	Other
Rice					
Tinned tuna					
Tinned meat					
Noodles					

Root vegetables					
Green vegetables					
Fruit					
Fresh Meat (Bullock and Pig)					
Fresh Fish					
Chicken					
Beans/Peanuts					
Eggs					
Take-Away					
Breakfast crackers					
Soft Drink					
Sweets					

6. Of the food you eat every day, what's the main reason you choose them?

- i) Tastes Good
- ii) Quick and easy to get/ find
- iii) Quick and easy to cook/ prepare
- iv) Cost
- v) Fills me up
- vi) Familiarity
- vii) It is healthy
- viii) Kastom/ Tradition
- ix) Other.....

7. What is the biggest barrier to you eating more Aelan Kakae , (pick one)?

- It is too expensive
- Time to prepare
- Land for garden
- Time to make a garden
- Preference

Other? _____

8. What would help you eat more Aelan Kakae (pick one)?

Land to garden

Time to make a garden

New recipes

If it was cheaper to buy

Other _____

9. How many times a week do you get food from the following sources:

	Every day	2-3 times a week	1 x a week	2-3 times month	1 time every 3 months	Never	Don't know
Supermarket							
Private shop							
Co-operatives							
Take-away							
Market							
20 vatu							
Garden							
Food aid							
Remittances							
Shared meal							
Food provided by neighbours							
Community food kitchen							
Borrow food from others							