

Report



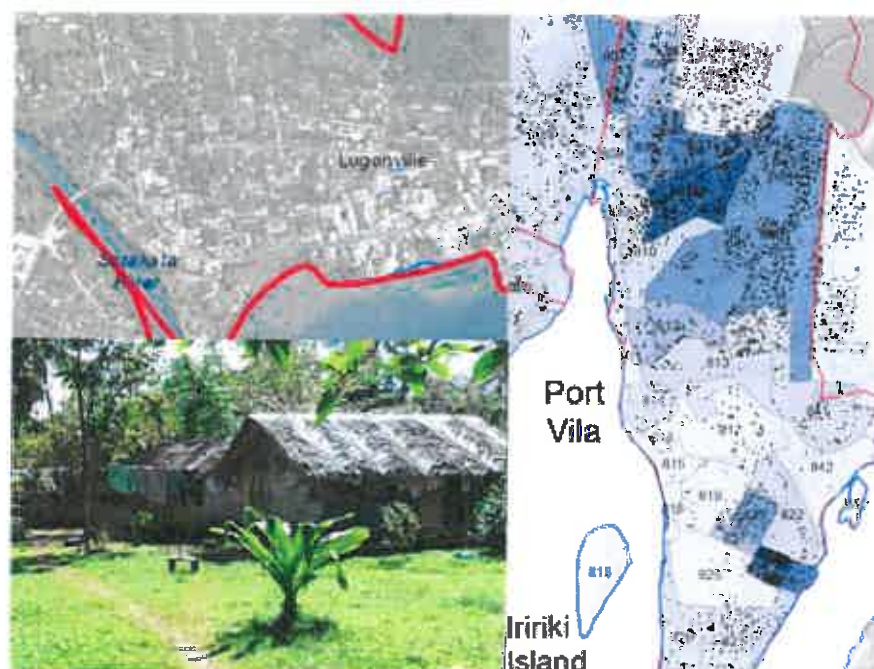
Urban Growth Trends Report - Port Vila and Luganville: Risk Mapping and Planning for Urban Preparedness (Contract No. C.06)

Project Deliverable 2

Prepared for Vanuatu Meteorological and Geo-hazard Department

Prepared by Beca International Consultants Ltd (Beca), GNS Science and the National Institute of Water and Atmospheric Research (NIWA)

22 December 2015



Beca

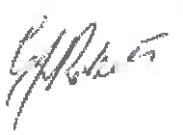


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Executive summary

1. The Urban Growth Trends Report forms part of the Mainstreaming Disaster Risk Reduction Project: Risk Mapping and Planning for Urban Preparedness Project being undertaken by the Vanuatu Meteorology and Geo-hazards Department. The report analyses the trend existing urban development, the historical growth trends, the legislative framework and key drivers that are directing growth in Port Vila and Luganville urban areas.
1. Land use in Vanuatu is governed by both the formal land use planning system and the informal custom land tenure and land allocation system. The formal system is applicable for government land within the urban areas and is governed by several pieces of legislation. Under this, Councils are required to prepare plans for areas that have been Declared Physical Planning areas. Neither Port Vila nor Luganville currently have a gazetted plan in place and therefore have little influence over current land development applications. Outside of the municipal boundaries for Port Vila and Luganville, the majority of land remains under the custom land tenure system. Therefore, the custom system has a key influence on the development of Vanuatu's two urban areas.
2. Vanuatu has experienced significant growth in the years since census population figures started in 1967. The 2009 census determined that the total population was 234,023. This compares with 186,678 people in 1999, and represents an increase of 25.4% or 47,345 people. This population increase represents an average annual growth rate of 2.3%, or an increase of 4,733 people per year. Much of this growth has occurred in the urban areas of Port Vila and Luganville where the combined urban population in 2009 was 57,195 making up 24.4% of the total population of the country.
3. Port Vila's population in the last census (2009) was 44,040, an increase of approximately 50% on the previous census result (29,356 in 1999). The city is growing at a rate of 4.1%. Based on the analysis of population data, the fastest growing areas of the city area are all located on the periphery of the city; to the east along the Teouma corridor and to the west around the airport and the Mele Flats. Growth is occurring predominantly outside the Port Vila municipal boundaries with the population in the central city and older areas being relatively stable. The growth on the periphery of the city is associated with predominantly lower income residential development including some areas of informal settlement. These fastest growing areas are a significant contributor to the total population of Port Vila.
4. The densest areas of population are in the older informal or less formal settlements in the municipal boundaries. Without reticulated sewage system these areas have limited capacity to absorb additional growth. Never the less, the population of these areas is continuing to grow due to natural growth and people moving into areas to stay with family. This pattern of growth is likely to continue in the future.
5. Lack of housing affordability within the municipal boundaries is a significant contributor to growth on the periphery of the city. Accessing land through the formal lease and subdivision process can take a significant period of time. This results in a reluctance to enter into the formal development process. Therefore, future growth is expected to continue on land outside the municipal boundary where access to land is easier in regards to time taken to access land and is a lower cost.
6. Development will continue to spread beyond the municipal boundary and as existing areas fill up or land tenure issues arise, so new areas beyond these will come under pressure for development.

7. Luganville's population at the last census was 13,162, an increase of 22.5% on the previous census result (10,738 in 1999). The town is growing at a rate of 2%, only slightly above the rate for the country's rural areas. T Based on the analysis of population data, growth of the town appears to result from natural growth rather than internal migration (as is the case with Port Vila). The fastest growing areas are located outside the municipal boundaries on land around the airport and Ban Ban and in the informal areas located alongside the Sarakata River. As with Port Vila, growth is occurring outside the municipal boundaries.
8. Custom land issues appear to have a greater influence over land development in Luganville compared to Port Vila. Development with the agreement of the custom landowners is likely to continue to occur outside the municipal boundaries.
9. There are areas of informal settlement that are already subject to high risk of flooding. The government has identified some land as a possible location to relocate residents from areas subject to flooding however progress to acquire the land has been slow and it is likely uptake would be slow as there is little incentive to shift.

1 Introduction

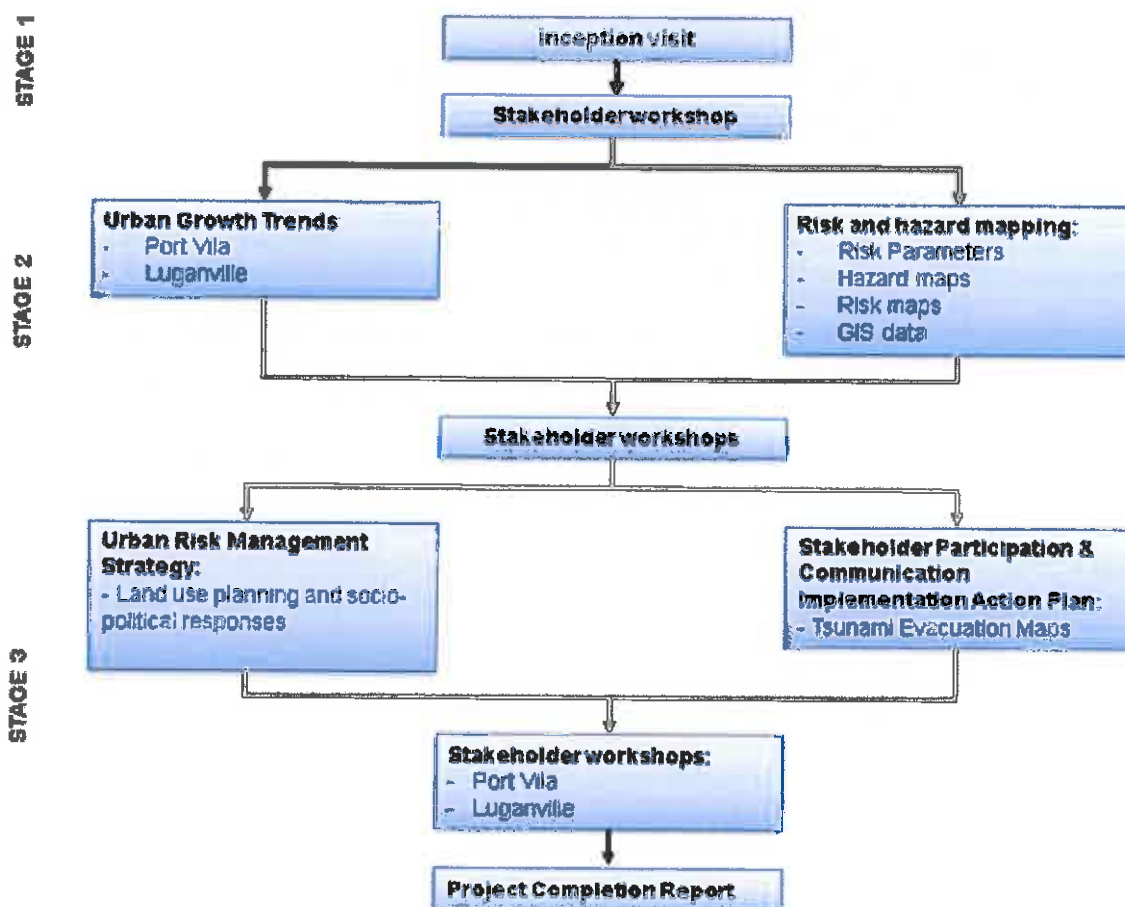
This Urban Growth Trends Report forms part of Stage 2 of the Mainstreaming Disaster Risk Reduction Project: Risk Mapping and Planning for Urban Preparedness Project (the Project) being undertaken by the Vanuatu Meteorology and Geo-hazards Department (VMGD).

The purpose of the report is to analyse the trend characteristics and gain a greater understanding of the historical and likely future growth of the greater Port Vila and Luganville urban areas. It examines three key questions:

- How have the urban areas of Luganville and Port Vila grown over the last 10-15 years?
- What are the drivers for this growth?
- Which areas are likely to continue growing based on this information?

Understanding existing urban development, the historical growth trends, the legislative framework and key drivers that are directing growth in Port Vila and Luganville urban areas sets the scene for a response to risk. The information from this report will be used alongside the natural hazard information and risk mapping prepared for these two areas to inform the development of the Urban Risk Management Strategy for greater Port Vila and Luganville, being Stage 3 of the Project. The figure below shows how this Urban Growth Trends report fits into the overall project.

Figure 1: Project stages



The Urban Risk Management Strategy provides a guide as to how and where greater Port Vila and Luganville should grow in the future based on historical trends and the urban risk assessment. The key findings of this study and the implications for the next stage of the project are set out in Section 10.

1.1 Scope

This Urban Growth Trends Report has been prepared for the two main urban settlements of Vanuatu, the greater Port Vila urban area and Luganville.

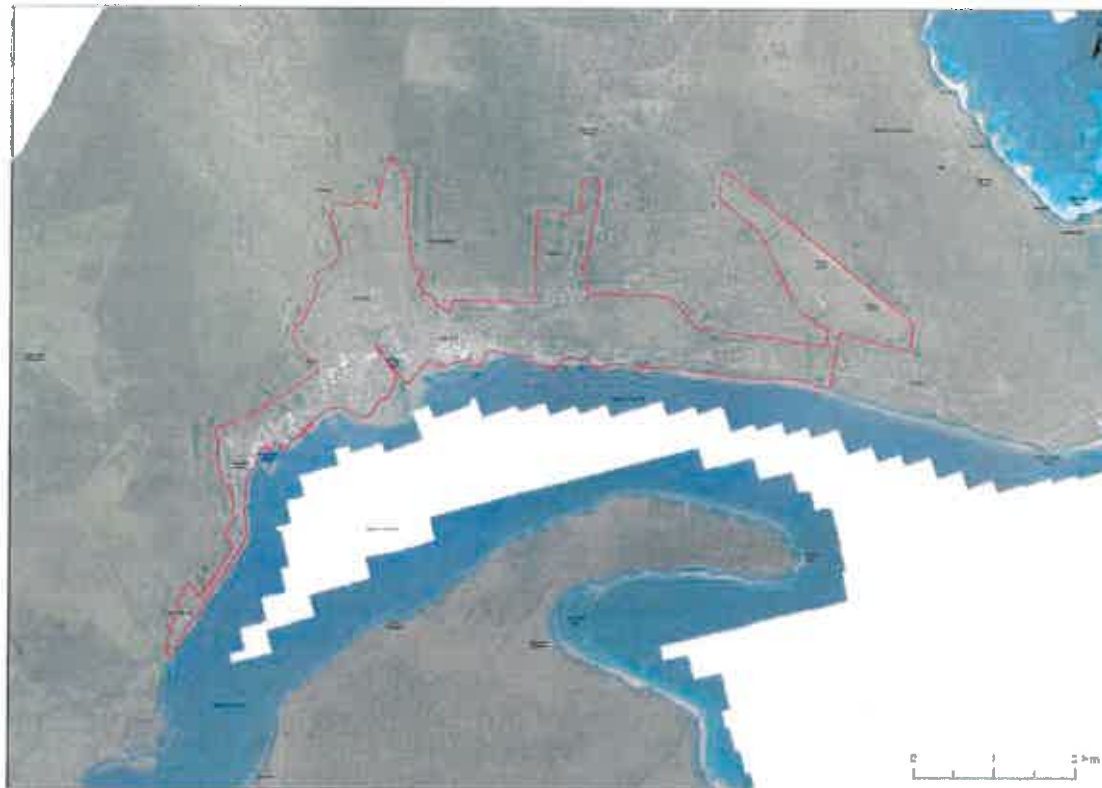
For the purposes of this study the greater Port Vila area is defined as the Port Vila municipality plus the peri-urban declared physical planning areas for the SHEFA Province. The greater Port Vila area and the municipal boundary is shown in Figure 1. The existing planning instruments governing these areas are set out in further detail in Section 3.1.1a of this report.

For the purposes of this study the Luganville study area is the physical planning area for Luganville municipal boundary plus a 3 kilometre buffer. The Luganville area and the municipal boundary is shown in Figure 2. The existing planning instruments governing these areas are set out in further detail in Section 3.1.1b of this report.

Figure 1: Greater Port Vila (with the municipal boundaries shown in red)



Figure 2: Luganville (with the municipal boundaries shown in red)



1.2 Data and methodology

This report has been prepared using existing information including data from census, surveys, town planning documents, existing studies and information provided from key stakeholders (see Table 1 and Appendix C for a list of stakeholders consulted and Section 11 for references). Where more than one source of information exists, the best (and what is deemed to be the most accurate) available source has been used. This includes the census data embedded within Geographic Information Systems (GIS) data supplied for the Project and census information sourced from the Department of Statistics. The accuracy of the information/data has not been separately verified by the project team.

The primary source of official population information is the census data gathered by the Department of Statistics. The dates of the censuses used for this study are as follows:

- 1989 census held on 16 May 1989¹. This is considered the first official census. The project team could only confidently match the data for Port Vila for this period;
- 1999 census held on 16 November 1999²; and
- 2009 census held on 16 November 2009³.

¹ Vanuatu 1989 census data tables sourced from Pacific web:
http://www.pacificweb.org/DOCS/Other%20P.I/Vanuatu/Vanuatu89_tbl.pdf (accessed June 2015)

² Vanuatu 2009 census data tables sourced from Pacific web:
http://www.pacificweb.org/DOCS/Other%20P.I/Vanuatu/Vanuatu89_tbl.pdf (accessed June 2015)

³ Vanuatu 2009 census data sourced from Vanuatu Department of Statistics on 22 June 2015.

The 2009 census information has not yet been analysed at census unit level or reported, so the raw data for the Port Vila and Luganville urban areas was sourced directly from the National Statistics Office and has been used for those areas. This raw data has been used to examine the characteristics of the fastest growing areas.

Based on a discussion with National Statistics Office staff, it appears that the census enumeration areas were altered slightly between 1999 and 2009. We have reviewed the areas, and the changes are not significant. For the purposes of examining trends between the census periods, the same enumeration areas have been assumed for all three census periods. **Appendix A (Port Vila)** and **Appendix B (Luganville)** contain the data tables that have been relied upon for this report.

During the 2009 census, census collectors used Global Positioning System (GPS) to record the position of dwellings during the collection of census forms. While this dwelling data does not appear complete when overlaid on the aerial photographs, it does provide the best available indication of the extent of residential development. The GPS data also included population numbers and this data has been used for the areas beyond the urban areas, where the raw data was not provided.

The key growth indicators that have been examined are:

- Population change (the total population increase over the period);
- Population growth rate (the rate of growth in population over the period); and
- Population density (the number of persons per hectare).

Using this information, the fastest growing urban areas in Port Vila and Luganville have been identified and analysed further to identify particular characteristics and commonalities. The information from the Vanuatu Household Income and Expenditure Survey Reports for 2006 and 2010 have been used to confirm the baseline indicators for the urban areas. These reports only analyse the survey information down as far as each of the 6 provinces, rural and urban areas and therefore cannot be used at the census unit level.

Information from previous studies (set out in Section 11) has been used to verify and/expand on the statistical analysis.

1.3 Stakeholder consultation

Two workshops were held, one in Port Vila on 11 August 2015 and the other in Luganville on Thursday 13 August 2015, to present the initial findings of the urban growth trends study and to gain additional information from participants to inform the key drivers for the identified growth.

Meetings were also held with several parties to gain additional information to inform this report. These included representatives of:

- central and local government;
- the land development and real estate sector; and
- custom leaders/community representatives.

Appendix C sets out the persons consulted during the preparation of this report.

2 Initial Stakeholder Assessment

An initial stakeholder assessment has been undertaken to identify the key parties that drive the direction of growth in Port Vila and Luganville. This includes those parties making land allocation decisions and those seeking access to land for business and residential purposes. The assessment is set out in Table 1. The stakeholders have been broadly grouped into the following:

- central and local government
- landowners and leaseholders
- land occupiers (residents and businesses)
- land development and sales sector
- financial sector
- providers of low cost/affordable housing
- women and youth

The attendees at the Port Vila stakeholder workshop reviewed and added to the list of stakeholders.

This initial stakeholder assessment will be used to inform later project deliverables including the Stakeholder Participation and Communications Implementation Action Plan..

Table 1: Key stakeholders either influencing or affected by urban growth

Stakeholder	Role in land allocation or access		Details of who
Central and local government			
Ministry for Climate Change Adaptation, Meteorology, Geo-Hazards, Environment, Energy and Disaster Management	Monitoring of natural hazards, public awareness, Disaster response co-ordination, and coordinating initiatives addressing climate change and disaster risk reduction.	Disaster Committee Chairman, National Disaster Management Office, National Advisory Board, Vanuatu Meteorological and Geo-Hazards Department.	
Ministry of Internal Affairs	Co-ordination of government responses to local government plan development, building permits and bylaws.	Department of Local Authorities – Physical Planning Unit.	
Ministry of Infrastructure and Public Works Utilities	Oversight of public infrastructure, building code, controls and permits. Opening up new areas for development through the building of roads and provision of services.	Public Works Department Service providers (eg. UNELCO)	
Port Vila and Luganville Municipal Councils	Regulatory planning control for areas within the municipal boundary including provision of services. Elected representatives for the Municipal Area.	Department of Local Authorities Staff and Councillors, Municipal Planners, Area Council Chairman, Area Council Secretaries, and Ward Councils.	
SHEFA and Samna Provincial Councils	Physical Planning and zoning of SHEFA province Regulatory planning control for declared province including provision of services within defined urban areas. Elected representatives for the SHEFA Province.	Department of Local Authorities. Provincial staff, Provincial Planners, Councillors, Area Council Chairman and Area Secretaries.	
Ministry of Lands and Natural Resources	Administering leases, land registry and land survey. Screening of land lease applications. Decisions on lease periods and land use attached to leases.	Department of Lands, Land Management and Planning Committee	
Department of Agriculture	Allocation of agricultural land.	Department of Agriculture	
Landowners and leaseholders			
Government (as landowner)	Landowner within declared areas. Control of government leased land.	Department of Lands	
Chiefs	Appointed chief over an area.	Malvatumauri – Council of Chiefs, Port Vila – Ifira, Tanvasoko, Mele, Pango and Erakor Paramount Chiefs. Santo chiefs. Chiefs and representative for community settlement areas.	
Custom landowners	Owners of land and control of tenancy arrangement for custom owned land.	Landowners of Efate and Santo. Department of Justice (for land disputes)	

Stakeholder	Role in land allocation or access	Details of who
Leaseholders	Community leases, corporate/company leases, and individual leases	Department of Lands, individual leaseholders.
Land occupiers (residents and businesses)		
Residents of informal settlements	Residents of areas that do not meeting building standards/regulations.	Community leaders, customs landowners/chiefs
Private residents	Residents of areas with titles that are legally registered.	Community leaders and individuals
Private owners of business and commercial land	Owners of businesses and commercial land and premises.	Business groups
Manufacturers and large employers	Siting of new and growing businesses that provide employment for low income people.	Large manufacturers and employers (eg. port, airport, resorts)
Land development and sales sector		
Land development companies/organisations	Land development including subdivision, infrastructure provision and land sale.	Land development companies/agencies (eg. Caillard Kaddour Ltd and Vanuatu National Provident Fund)
Real estate firms	Sales of residential, commercial and industrial land.	Real estate companies (eg. First National Real Estate)
Financial sector		
Financial institutions	Provision of loan equity.	Member Financial Services Limited, Commercial banks (eg. National Bank of Vanuatu, ANZ, Westpac and Bred Bank)
Insurance companies	Mortgage and asset insurance.	Insurance companies (eg. AFA Limited and QBE Insurance (Vanuatu) Limited)
Providers of low cost/affordable housing		
National housing providers	Provision of low cost, affordable housing and land.	National Housing Corporation, housing schemes.
Non-Government Organisations and community organisations	Supporting residents of informal settlement areas including through house building programmes.	Churches, NGOs (eg. Habitat for Humanity)
Women and youth		
Women	Gender balance equity.	Woman Groups, Vatu Mauri Consortium
Youth	Future community and political leaders.	Youth Forums, schools and education providers.

3 The Context for Urban Development

The formal land use planning and land development system in Vanuatu is underpinned by four key pieces of legislation. They are the Physical Planning Act, the Municipalities Act, the Decentralization Act and the Land Lease Act. A brief description of these is provided below as they set the context for existing urban growth in Vanuatu. Further discussion of landownership, access to land and the development framework, as they act as influencers of growth, is provided in Section 7.

In addition to the formal system, the informal system established under customary land ownership and land allocation has a key influence on the development of Vanuatu's two urban areas. Custom land practice is discussed briefly in Section 7.2 below with further discussion as to how it acts as an influencer of growth provided in Section 7.

3.1 The formal land use planning and land development system

3.1.1 The Physical Planning Act No 22, 1986

The Physical Planning Act No 22 of 1986 establishes a mechanism for declaring areas subject to physical plans. Physical plans control developments according to 23 classes of activity and through development control rules specified in those plans. The process is firstly to declare a Physical Planning Area by means of the *Gazette*, and then to proceed to prepare a physical plan.

While Physical Planning Areas have been declared, no physical plans have yet been approved (drafts were prepared for both Port Vila and Luganville). The lack of adoption of plans appears to be a funding issue but could potentially reflect a lack of political appetite to have formal development controls in place.

At present, applications for development permissions are reviewed and commented on by the Physical Planning Unit and other departments. The Physical Planning Unit makes reference to the draft zoning maps in formulating its response. In the case of developments within municipal boundaries the municipal councils have the power of grant of permissions (see Municipalities Act below).

Schedule 2 of the Physical Planning Act contains information about enforcement. This enables Council to take enforcement action if a development has been carried out without permission or if conditions of a permission have not been complied with. However, given there are no legal physical plans in place, the ability of Council to take enforcement action is limited.

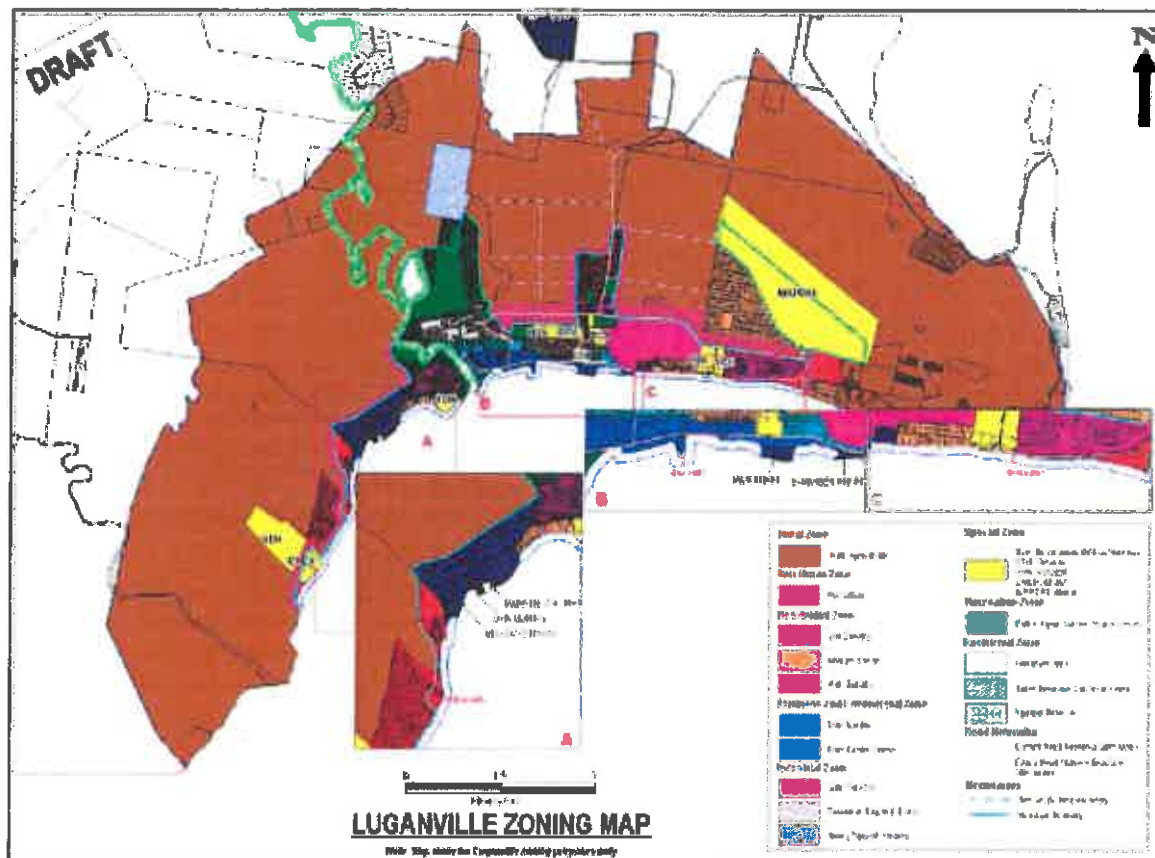
a. Port Vila planning

Greater Port Vila encompasses both the area designated as Port Vila Municipality in 1980 (which essentially is government-owned land), and the surrounding areas that lie between the Municipality and the outlying villages of Ifira, Mele, Pango and Erakor, but which are administratively within the local government area of SHEFA Province.

The Physical Planning Act empowers the Port Vila Municipal Council to carry out physical planning in Port Vila. A draft zoning plan has been prepared for the municipal area. The draft plan is provided in Figure 3.

A draft zoning plan has been prepared for the municipal area and the area out to 3 kilometres beyond the municipal boundary. The draft plan is shown in Figure 4.

Figure 4: Luganville draft zoning map⁵



3.1.2 The Municipalities Act No 5, 1980

The Municipalities Act No 5 1980 establishes the legal townships of Port Vila and Luganville and their respective municipal councils, and affords control over some 31 classes of activity (unless restricted by the Minister). Municipal councils are empowered to create bylaws under the Act.

The Port Vila Municipal Council and the Luganville Municipal Council are empowered by the Municipalities Act to make by-laws and regulations to control governance in Port Vila and Luganville.

3.1.3 The Decentralisation Act No 1, 1994

The Decentralisation Act No 1 of 1994 establishes local government councils and regions and provides for the making of bylaws, rules and regulations. A Local Government Council has the general power of responsibility for good government of its local government region and is directed toward promoting the health and welfare of the people under the Decentralisation Act.

3.1.4 Land Leases Act No 4, 1983

⁵ Received from Jeffrey Kaitip, Department of Local Administration on 10 August 2015.

The Land Leases Act provides, among other things, for the regulation and control of government land leases. Government land is mainly within the municipal boundaries with custom land outside of municipal boundaries, within the SHEFA and Sanma provinces.

Leases granted for periods of less than 3 years are not required to be registered. Leases may be granted for up to 75 years.

Leases have conditions, including that the land must not be used for a purpose other than that specified in the lease without the land owners approval. For example, you cannot run a commercial business on land that has a residential lease. Recently leases are being issued without a stated purpose⁶. This means that the land can be used for any purpose. For example, a commercial premises being operated in a largely residential area. Section 7.3 provides further discussion of the steps and timing required to secure a formal lease.

3.2 The custom land tenure system

The majority of land in Vanuatu falls under the custom land tenure system. When Vanuatu gained independence in 1980, all land was returned to customary ownership and it was written into the Constitution that only ni-Vanuatu would be able to own land and only in a collective capacity. It was constitutionally guaranteed that the rules of custom shall form the basis of ownership and use of land. The Constitution requires the Government to arrange for appropriate customary institutions or procedures to resolve disputes concerning the ownership of custom land.

Customary land cannot be alienated or sold off. Custom owners are permitted to lease land to foreigners. Rural leases are usually for 75 years (being the life of a coconut palm), and urban leases for 30 to 50 years. Under the Land Leases Act, once the lease expires the custom land owner will take back the land.

Within the Port Vila and Luganville municipal boundaries, land has been acquired by government and custom owners have been compensated. Outside the municipal boundaries land remain under the custom land tenure system. This includes the areas on the peri-urban areas of Port Vila where urban development is occurring.

Further discussion of the customary land tenure and lease process is provided in Section 7.

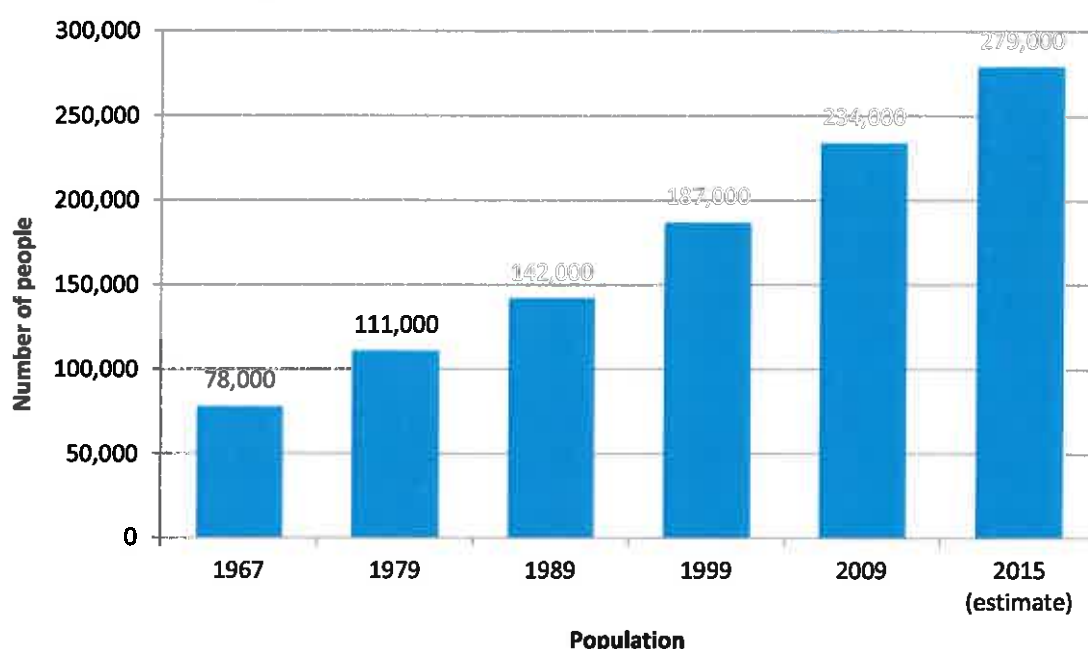
⁶ Per communication with Jeffrey Kaitip, Department of Local Administration on 8 August 2015.

4 Population Growth in Vanuatu

Vanuatu has experienced significant growth in the years since census population figures started in 1967. Figure 5 shows the population growth of Vanuatu sourced from population censuses between 1967 and 2009 and the current population prediction for 2015⁷.

The 2009 census determined that the total population was 234,023. This compares with 186,678 people in 1999, and represents an increase of 25.4% or 47,345 people. This population increase represents an average annual growth rate of 2.3%, or an increase of 4,733 people per year⁸.

Figure 5: Population growth in Vanuatu since 1967⁹



Much of this growth has occurred in the urban areas of Port Vila and Luganville where the combined urban population in 2009 was 57,195 making up 24.4% of the total population of the country. The urban areas experienced an average annual growth rate of approximately 3.5% per year between 1999 and 2009¹⁰. This was comprised of a growth rate of 4.1% for Port Vila and 2.0% for Luganville¹¹. This annual growth rate was a reduction from the combined urban growth rate of 4.0% for the previous period between 1989 and 1999. By comparison, the average annual population growth for the rural areas of the country was 1.9%. It is noted that the growth rate for Luganville is close to the rate of rural growth in the country. Therefore, while Luganville continues to grow, the source of this growth is more likely to be due to natural growth compared to Port Vila where growth is due to a combination of natural growth and internal migration to the city. The drivers for growth in the two urban areas are discussed in more detail in Section 7.

⁷ Sourced from SPC Noumea (SDD Division).

⁸ Source: Vanuatu National Statistics Office, 2009 National Population and Housing Census – Analytical Report, Volume 2.

⁹ Source: National Statistics Office website and 2015 estimate from SPC Noumea (SDD Division).

¹⁰ Source: Vanuatu National Statistics Office, 2009 National Population and Housing Census – Analytical Report, Volume 2.

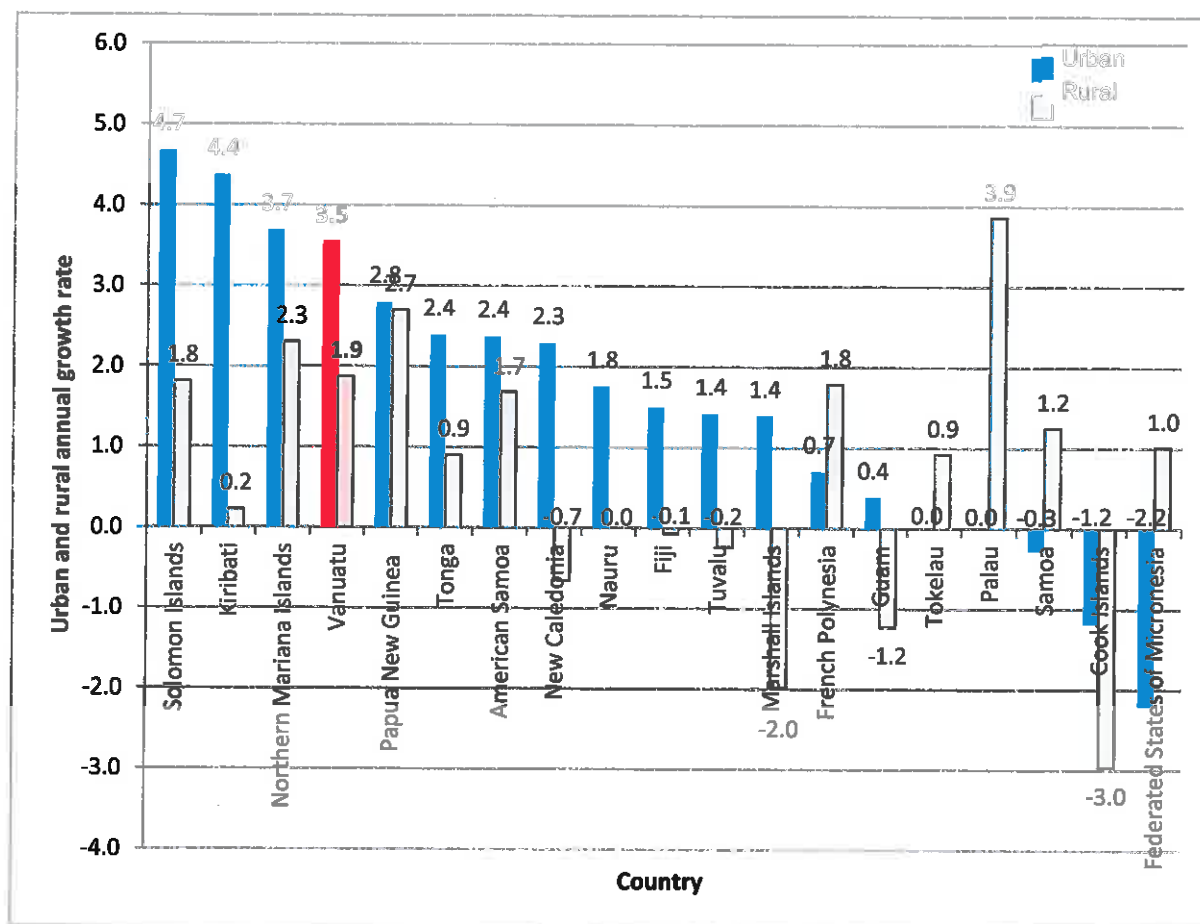
¹¹ Derived from 2009 National Population and Housing Census.

There were lower growth rates in all provinces during the period 1999-2009 compared to the period from 1989-1999, except for SHEFA province which recorded a growth rate of 3.7% in 1999-2009 compared to 3.4% growth during 1989-1999. As discussed in Section 5 of this report, the growth in the SHEFA province is likely to be focussed on the peri-urban areas of Port Vila where the population is included in the provincial figures but is part of the greater Port Vila area.

The rate for immigration in Vanuatu is low with no significant international migration occurring during the intercensal period of 1999-2009¹². Therefore the growth of the urban areas is derived from natural growth (ie. births) and internal migration as people move from rural areas to the urban centres, and particularly Port Vila.

Figure 6 compares Vanuatu's average annual population growth for urban and rural areas with other countries in the Pacific. This shows that Vanuatu's urban growth rates sits at the higher end of growth rates in the Pacific alongside the Solomon Islands, Kiribati and the Mariana Islands.

Figure 6: Urban and rural average annual population growth¹³



¹² Source: Vanuatu National Statistics Office, 2009 National Population and Housing Census – Analytical Report, Volume 2, Page 69.

¹³ Derived from the Secretariat of the Pacific Community, Statistics for Development Division, Pacific Island Population - Estimates and projections of demographic indicators for selected years, updated September 2013 available from <http://www.spc.int/sdd/>.

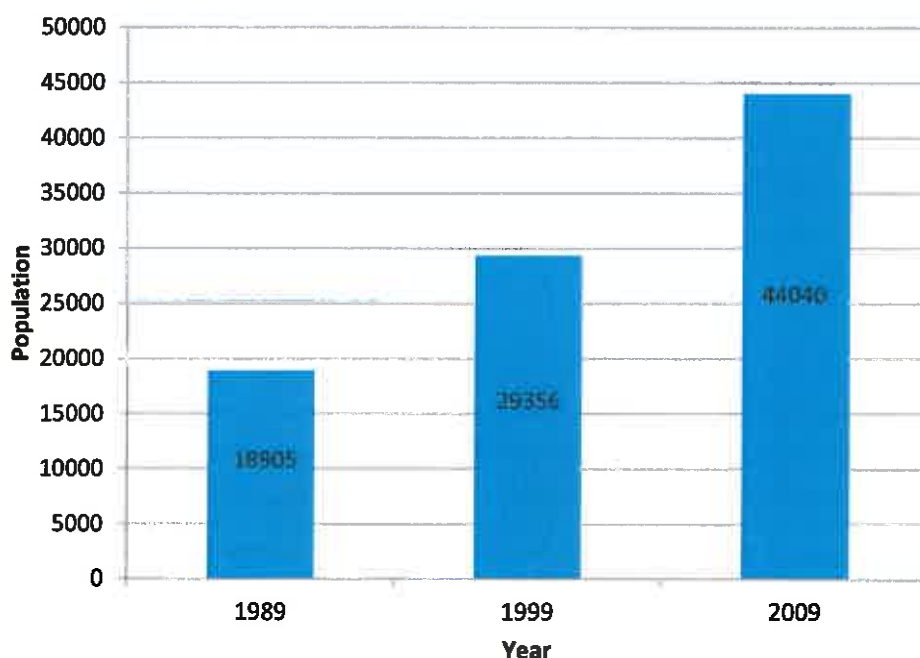
5 Urban Growth Trends for Port Vila

Port Vila is the largest urban centre in Vanuatu. The greater Port Vila area is comprised of the municipal area and the peri-urban areas of Mele, Tanvasoko, Ifira, Erakor, Eratap and Pango.

5.1 Historical growth of Port Vila

Port Vila's population in the last census (2009) was 44,040, an increase of approximately 50% on the previous census result (29,356 in 1999). In 2009 the population of Port Vila formed 18.8% of the total country population. The graph in Figure 7 shows the increase in population for Port Vila from 1989 to 2009.

Figure 7: Population growth in Port Vila for 1989, 1999 and 2009¹⁴



Using the census data for 1999 and 2009, the following population growth indicators for Port Vila have been mapped:

- Population change (the total population increase over the period);
- Population growth rate (the rate of growth in population over the period); and
- Population density (the number of persons per hectare).

The location of the enumeration areas can be found on Figure 8.

The change in population in Port Vila between 1999 and 2009 is shown graphically on Figure 8: Location of census enumeration areas for Port Vila

¹⁴ Source: Vanuatu National Statistics website.

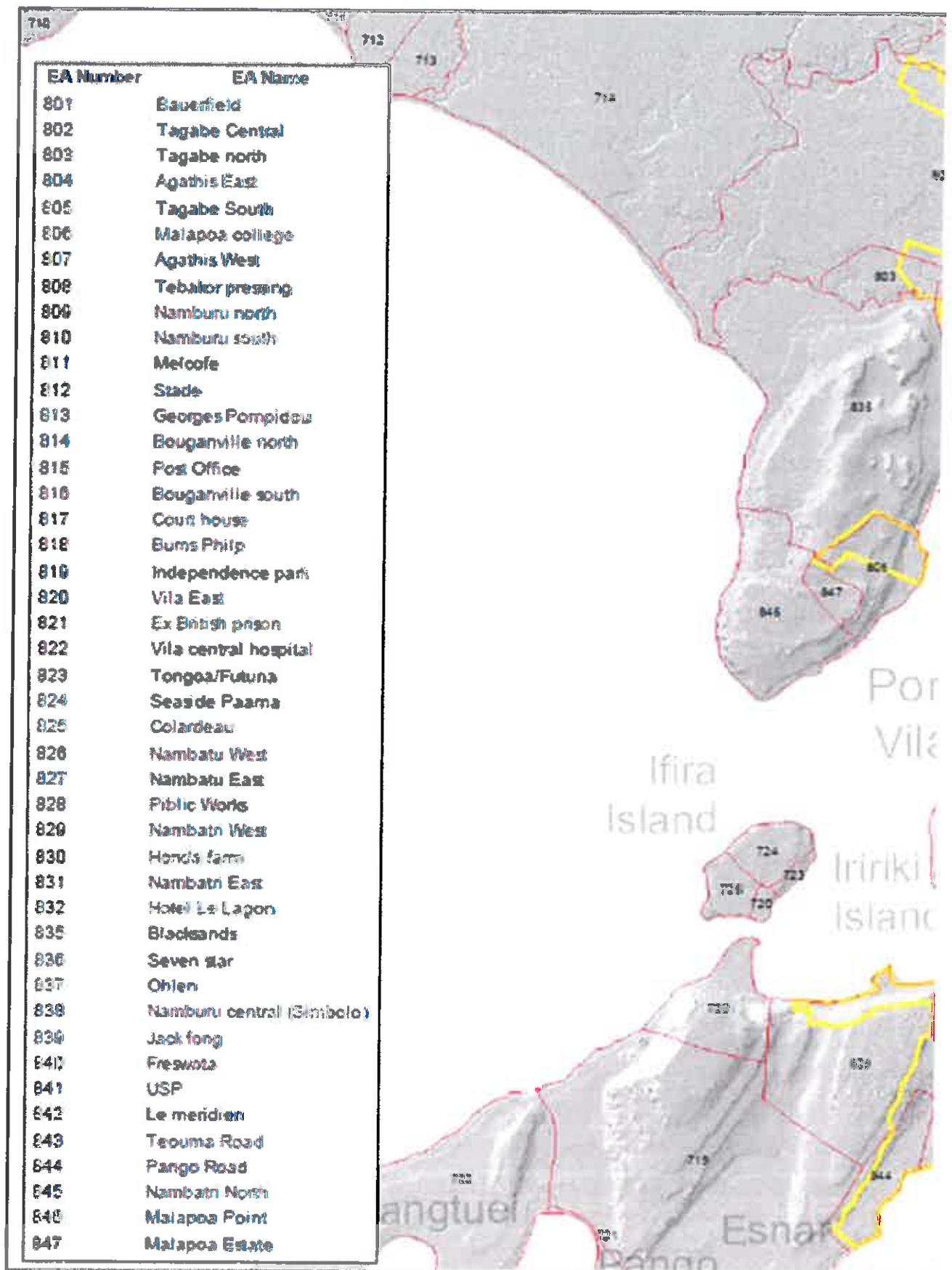


Figure 9. This shows the total number of additional people in each of the census enumeration areas for the 10 year period. The largest population increases were in the census enumeration areas of Blacksands, Bauerfield, Freswota, Teouma Road and Chris Soles. These areas experienced an increase of over 2000 people during the 10 year period. The black dots on the plan indicate the dwellings recorded at the time of collecting the 2009 census¹⁵. These dwelling points indicate that the population is concentrated in certain areas rather than being spread uniformly across an enumeration area. For example, the Chris Soles enumeration area experienced an increase of 2,678 people between 1999 and 2009 with development largely occurring in Elakles, Eratrap and the Teouma flats.

The population change data indicates that the areas experiencing the greatest increase in population over the 10 year period are located on the periphery of the urban area, to the north and east. The areas of Bauerfield, Freswota, Blacksands and Teouma Road (which are included in the urban population figures) collectively grew by 11,819 people; making up 74% of the total population growth for the city over the period. The Chris Soles enumeration area is considered a rural area for census reporting purposes, but the growth associated with that area is part of the large population growth experienced in the greater Port Vila Area. The rural areas in the greater Port Vila urban area have a combined population of 16,353 people which represents approximately 21% of the population of the SHEFA province.

The areas that have experienced a reduction in population are generally in the more established parts of the city with population reductions greater than 200 people occurring in the enumeration areas of Nambatri East, Ex British Prison and Nambatri West. The reduction in population for these areas range up to 346 people over the 10 year period which is not significant when compared to the population increases experienced elsewhere. This is unlikely to indicate a long term reduction in population for these areas.

Population growth as an average percentage per year for each census enumeration area is shown on Figure 10. The percentage represents the growth in population per year relative to the number of people in each enumeration area. The areas experiencing the greatest growth (of over 15% per year) are Melcoffe, Malapoa Point, Teouma Road, Vila East, Namburu South, Freswota, Bauerfield, Chris Soles, and Bellevue. Several of these areas had small existing populations (eg. 12 people for Melcoffe and 27 people for Malapoa Point) and therefore the growth in these enumeration areas is less statistically significant. Of the larger populations, Teouma Road and Bellevue experienced the greatest growth with 35% and 59% per year respectively. This means that the population of these two areas grew 3.5 and 5.9 fold over the period.

The population density for each census enumeration area is shown on Figure 11. This has been calculated by dividing the land area of each census unit by the total population within that unit. The highest densities in the city, with over 100 persons per hectare, are in Tongoa/Futuna (with the highest density of 247 persons per hectare), Tagebe Central, Numburu central and Namburu South. The areas located on the periphery of the city have lower densities due to the larger land area associated with these enumeration areas.

Section 5.3 discusses the characteristic of the fastest growing areas in Port Vila and Luganville including where people are from and their land tenure status.

¹⁵ These are GPS co-ordinates provided in the GIS files provided as base data for the project.

Figure 8: Location of census enumeration areas for Port Vila

Figure 9: Port Vila population change between 1999 and 2009

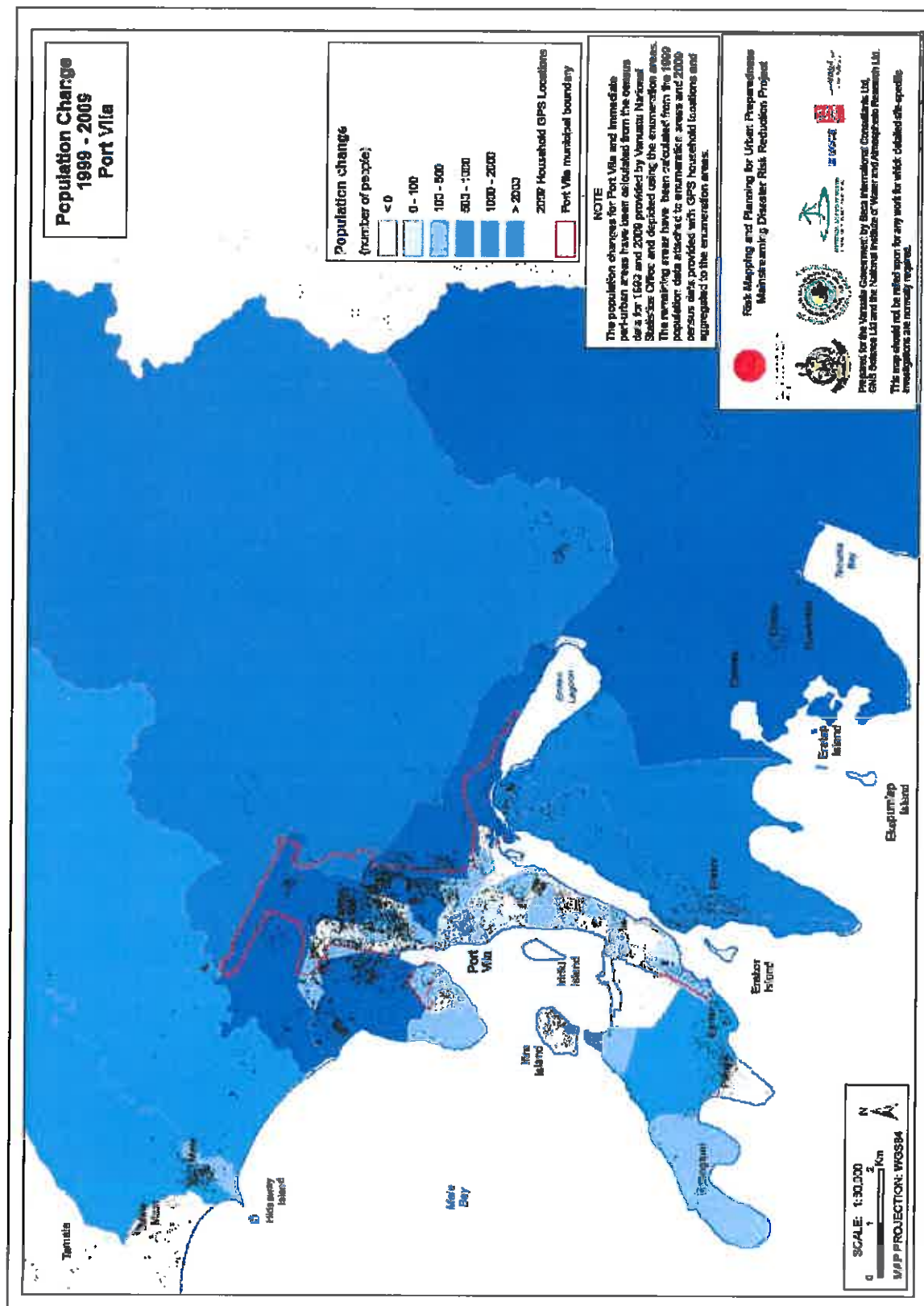
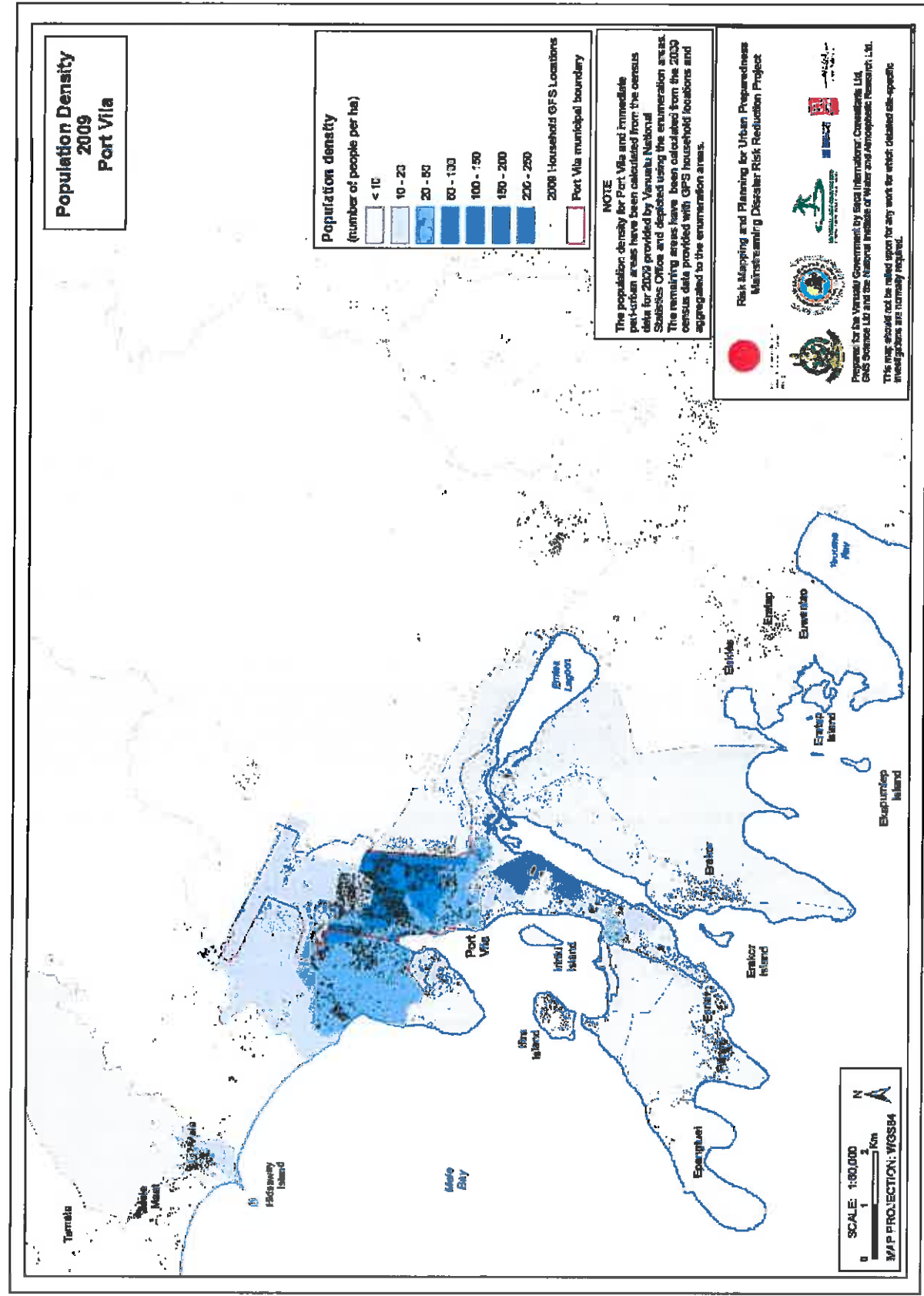


Figure 10: Population growth in Port Vila between 1999 and 2009

Figure 11: Population density in Port Vila



The fastest growing areas in Port Vila have been determined by examining the total population increase over the period, areas that have experienced significant growth in population and areas that have experienced a greater increase in population more recently (ie. the population is increasing more rapidly compared to other areas). The following parameters have been used to determine the fastest growing areas in Port Vila:

- Population increase of more than 500 over the 1999 – 2009 period. This captures all areas that have experienced significant population increase through either people shifting into an area of being born into that area. Within the Port Vila urban area the areas of Bauerfield, Blacksands, Teouma Road, Namburu North and Ohlen meet this parameter. Within the Greater Port Vila Area the areas of Chris Soles, Erakor and Bellevue meet this parameter.
- Areas with a population over 500 people where the population more than doubled over the 1999-2009 period (ie. greater than 10% per year). Within the Port Vila urban area, in addition to the areas already identified above, the area of USP meets this parameter. The areas of Vila East and Namburu South have been excluded as; while the data shows that the population of these areas has doubled during this 10 year period, review of the population data for the previous period (1989-1999) shows an unexplained reduction in population for both areas over that period. The total population change over the 20 year period is only 145 and 198 respectively and is therefore not significant. Within the greater Port Vila area, in addition to the areas already identified above, the areas of Mele Bay and Melektree meet this parameter.

Using these parameters, the areas in Table 2 have been identified as the fastest growing areas in Port Vila. The enumeration areas within the table distinguish between the Port Vila areas and those of greater Port Vila.

Table 2: Fastest growing areas in Port Vila

EA	Enumeration Area Name	1999 Population	2009 population	Population increase since 1999	% growth per year
Port Vila Areas					
801	Bauerfield	3186	6609	3423	11%
835	Blacksands	4744	7111	2367	5%
840	Freswota	2628	6475	3847	15%
843	Teouma Road	625	2807	2182	40%
809	Namburu north	880	1511	631	7%
837	Ohlen	661	1180	519	8%
841	USP	395	864	469	12%
Greater Port Vila Areas					
715	Chris Soles	1242	3929	2687	22%
716	Erakor	1128	2383	1255	11%
717	Erakor	985	2304	1319	13%
718	Bellevue	259	1795	1536	59%
712	Mele Bay	652	1509	857	13%
714	Melektree	250	967	717	29%

Based on this, the fastest growing areas of the city area are all located on the periphery of the city. This aligns with anecdotal comments from key stakeholders during discussions as part of preparing this report.

The fastest growing areas within the Port Vila urban area have a total population of 26,557 or 60% of the total population of the city (which was 44,040 in 2009). The areas beyond this, in Greater Port Vila, have a total population of 16,353 which represents 21 % of the rural population for the SHEFA province (which was 78,723 in 2009). Therefore, these fastest growing areas are a significant contributor to the total population of Port Vila.

5.2 Key features of Port Vila affecting population growth

There are several features of Port Vila that affect how and where the city is growing. These include the location and characteristics of informal settlements, the areas of business and employment and the key transport routes in the city. These features are discussed in the sections below. Other key influencers including further discussion of land access and land ownership are discussed in Section 7 of this report.

5.2.1 Land ownership in Port Vila¹⁶

All land within the Port Vila municipal area was acquired by the State from the customary landowners of Ifira Island following Vanuatu's independence in 1980. The State leases urban land to lessees.

Planning permission for each lease is initially governed by the Department of Lands through the category or class of lease (i.e. residential, industrial, commercial etc.), and then by the Municipality (e.g. types of commercial activity). Outside of the municipality in the greater Port Vila area, land management is the responsibility of the SHEFA Provincial Government Council, with customary landowners having the ultimate control over land use. Most of the peri-urban informal settlements such as the Blacksands/Manples and Etas settlements are on customary land, with only insecure land tenure for tenants and limited service provision due to the general reluctance of landowners to provide permanent infrastructure to these ostensibly transient communities.

There are no customary lands within the Port Vila municipal boundary as land is either freehold or state land. There is no clear line of demarcation between formal and informal settlements as there are numerous long-established settlements such as Blacksands and those living informally within Port Vila's physical planning areas.

5.2.2 Informal settlements in Port Vila

An informal settlement is a residential area where a group of housing units has been constructed on land to which the occupants have no legal claim, or which they occupy illegally; and/or unplanned settlements and areas where housing is not in compliance with planning and building regulations¹⁷. In Port Vila, basic urban services (sewerage, water and power provision) vary between the formal and informal settlements. While formal residential areas are often serviced, generally the informal settlements are not.

Many of the fastest growing areas of Port Vila contain informal settlements (eg. Blacksands) or they started out as informal settlements and the land tenure arrangements have subsequently been formalised (eg. Melcoffe and Freswota). Many of the newer informal settlements in Port Vila are on land with disputed tenure around the formal boundaries of the city. Uncertain land tenure contributes to the insecurity and other difficulties of those living in these areas.

It is not possible to accurately measure the number of people who live in the informal settlements of Port Vila from census data as the enumeration boundaries do not align with the boundaries of the

¹⁶ The information in this section has been sourced from World Bank 2015.

¹⁷ UN Habitat Programme definition.

5.3 Characteristics of the fastest growing areas

This section examines the socio-economic characteristics of the fastest growing areas in Port Vila using data from the 2009 population and household census. The raw data was sourced from the Vanuatu Department of Statistics. This was only available for the urban area of Port Vila (ie. not for the areas within the wider Port Vila Urban Area).

The characteristics of the fastest growing areas are examined to identify whether there are any particular features of the areas that differ from the general population.

5.3.1 Household size

The average household size (number of people per household) for the urban areas of Vanuatu is 4.8 persons. The average household size for the fastest growing urban areas (as identified in the first half of Table 2) are shown in the table below.

Area	Population	# of Households	Household size
Bauerfield	6609	1349	4.9
Namburu north	1511	324	4.7
Blacksands	7111	1451	4.9
Ohlen	1180	251	4.7
Freswota	6475	1293	5.0
USP	864	179	4.8
Teouma Road	2807	582	4.8
Port Vila total	26557	5429	4.9

Most of the areas have similar household size as the country average. That of Freswota is noticeably different with a higher average household size of 5.0. Stakeholder discussion during workshops identified that a reason for the large household sizes in Freswota is that a number of house owners rent out rooms and also have family members staying with them. This has the effect of increasing the average household size for this area.

5.3.2 Mobility

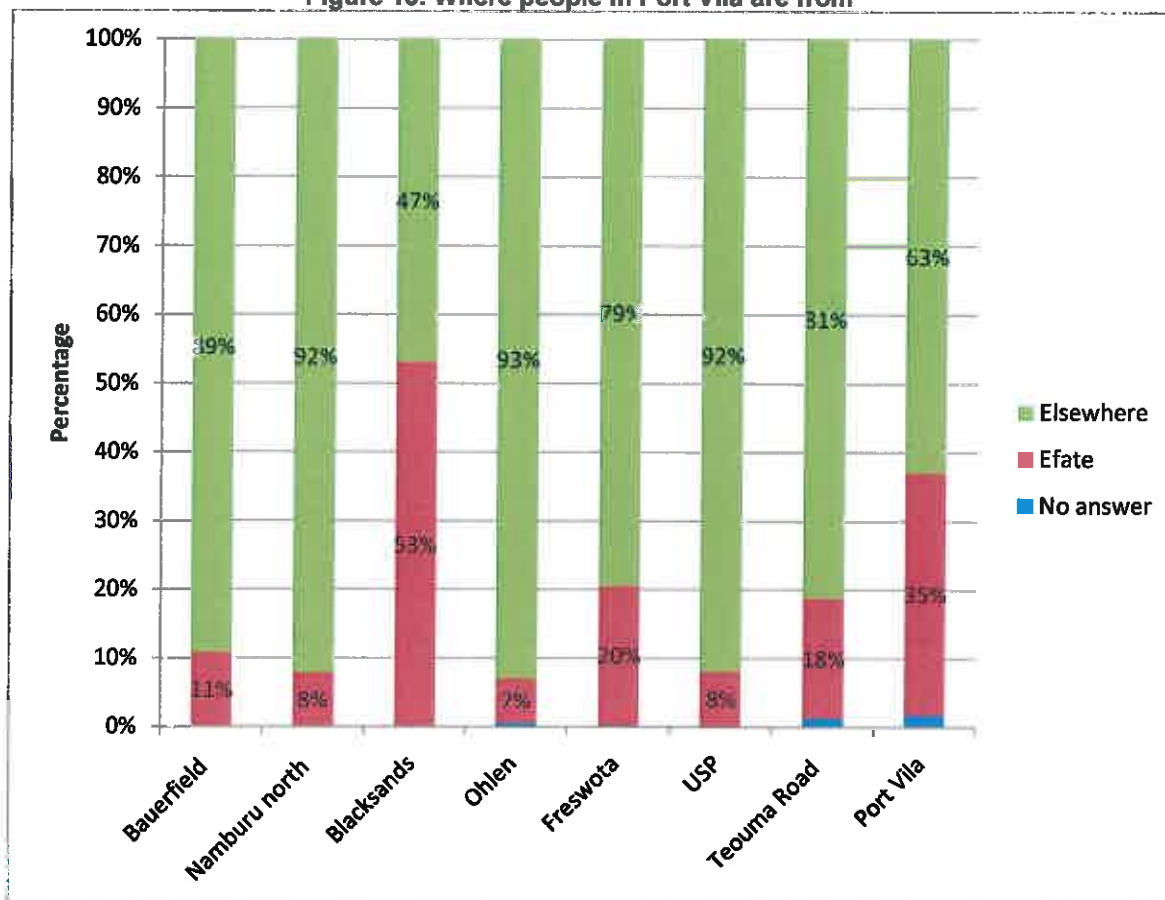
Mobility indicates where people have come from, how long they have lived in the area and how much of the growth experienced is due to internal migration (ie. from another area) and from natural growth (ie births).

Internal migration within Vanuatu during the five year period between 2004-2009 was primarily directed towards the SHEFA province and specifically to Port Vila. The largest numbers of migrants came from Tafea, Malampa and Penama.

The general figures for Port Vila indicate that 35% of respondents indicated that they are from Efate and 63% identified that they are from elsewhere in Vanuatu or another country. Given that the immigration rates in Vanuatu are so low, it is likely that those who identified that they are from elsewhere are likely to be from elsewhere in Vanuatu.

Figure 13 shows where people in the fastest growing areas and Port Vila generally are from. The location of these areas can be found on Figure 8.

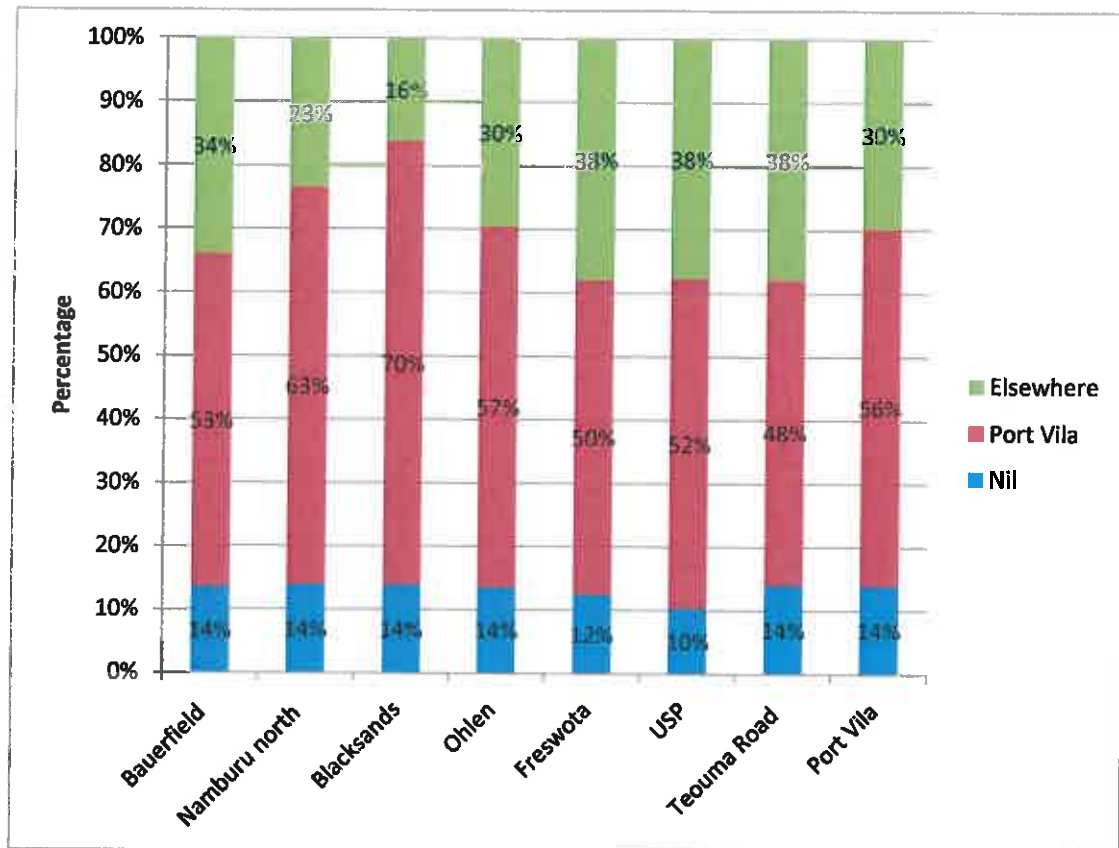
Figure 13: Where people in Port Vila are from



This indicates that a greater proportion of people living in the fastest growing areas are from elsewhere in Vanuatu (ranging from 79-92%) compared to the general figure for Port Vila. The exception is Blacksands which had only 47% of residents that come from elsewhere in Vanuatu. This may reflect the large number of people from Ifira that live in this settlement area

As part of the census, residents were also asked to identify whether they had lived in the same village or place as they did five years previously. Figure 14 shows where people in the fastest growing areas and Luganville generally identified that they lived 5 years previously.

Figure 14: Where people in Port Vila lived 5 years previously



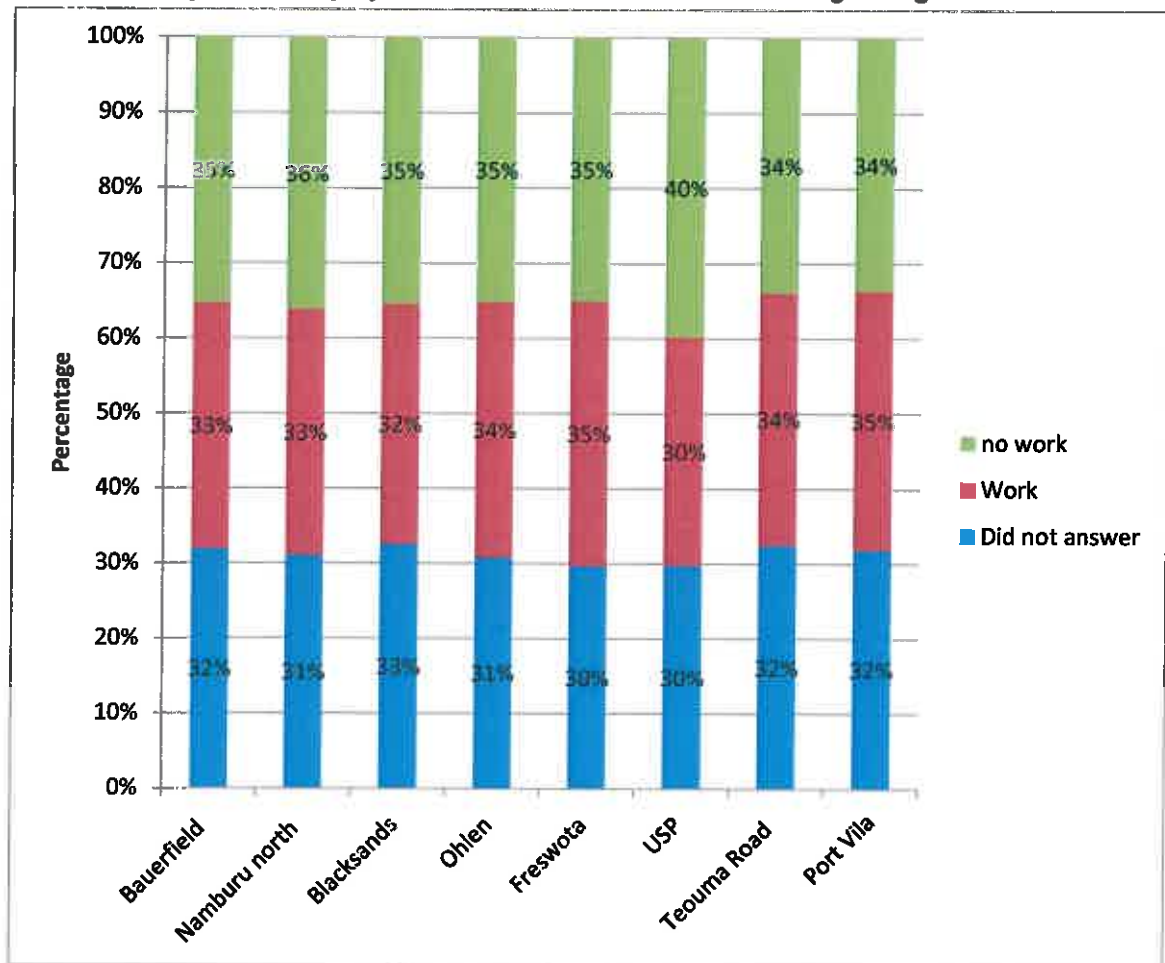
This shows that most of the fastest growing areas have a similar number of residents that identified that they lived somewhere else 5 years previously as the general figure for Port Vila. Interestingly, Blacksands has a higher proportion of residents that lived in Port Vila (70%) than the general Port Vila figure of 56%. The highest figure in the city is Tongoa/Futuna where 81% of the resident lived in the same place.

5.3.3 Employment

Based on national employment figures from the census, 18,016 (43%) of the paid workers in Vanuatu area located in the urban areas (Port Vila and Luganville).

The employment figures for Port Vila and the fastest growing areas are shown in Figure 15.

Figure 15: Employment status for Port Vila and fastest growing areas



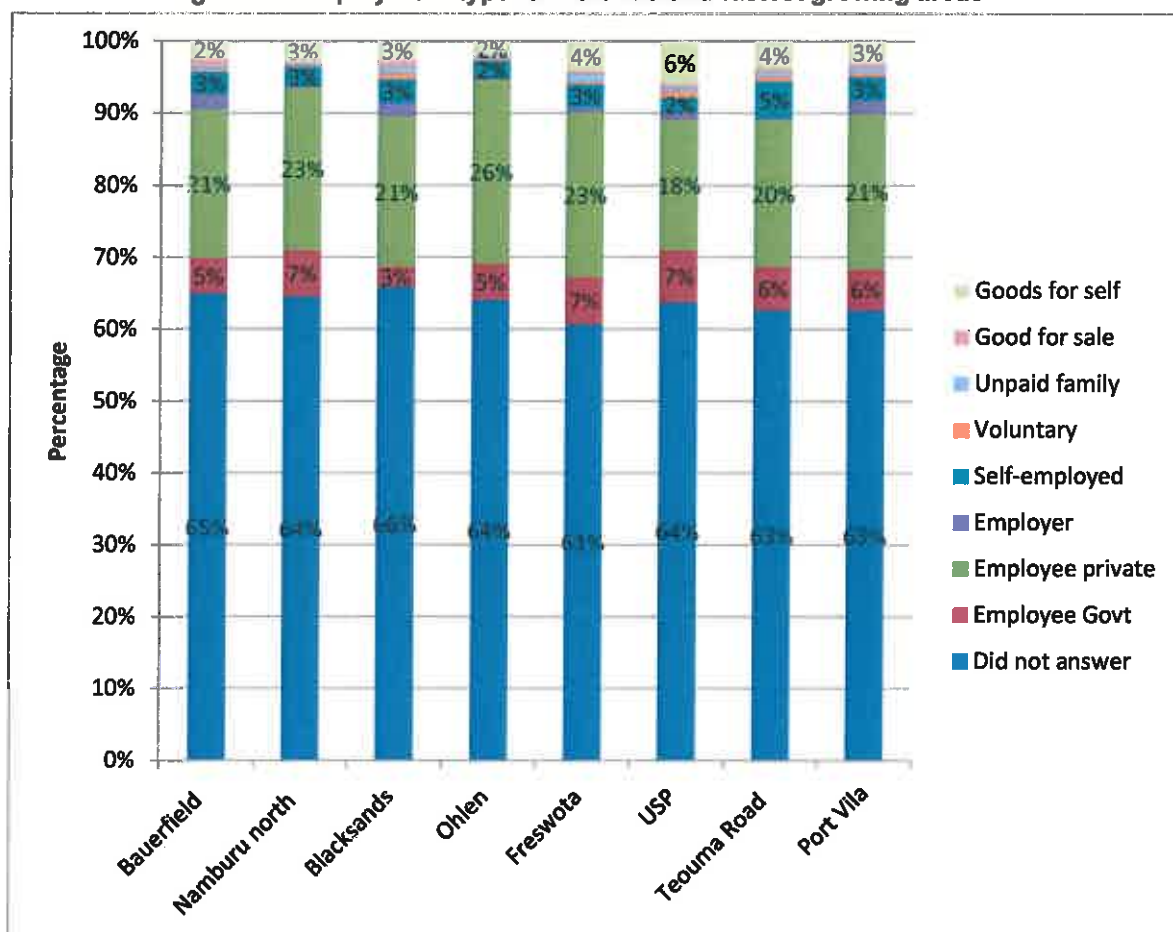
This shows that the employment status for the fastest growing areas does not differ markedly from the general figure for Port Vila.

For work type, the national census figures show that about 47% of all people in paid employment were working for a private enterprise (19,886) which is comprised of 18,517 private employees and 1,369 employers. Another 24% produced goods for sale (10,046), 15% were working in the public service (6,489), and 14% were self-employed (5,874).

In the urban areas, the figures are different and only 3% of all people in paid employment in the urban areas produced goods for sale while 64% of urban paid workers worked as private employees. The highest proportions of employees in the private sector were found in SHEFA (58%).

For the fastest growing areas in Port Vila, the employment figures are affected by the large percentage of respondents (up to 65%) that did not answer the employment questions. The graph below provided the breakdown for the fastest growing areas.

Figure 16: Employment type for Port Vila and fastest growing areas



This shows that the employment type for the fastest growing areas does not differ noticeably from the general figures for Port Vila.

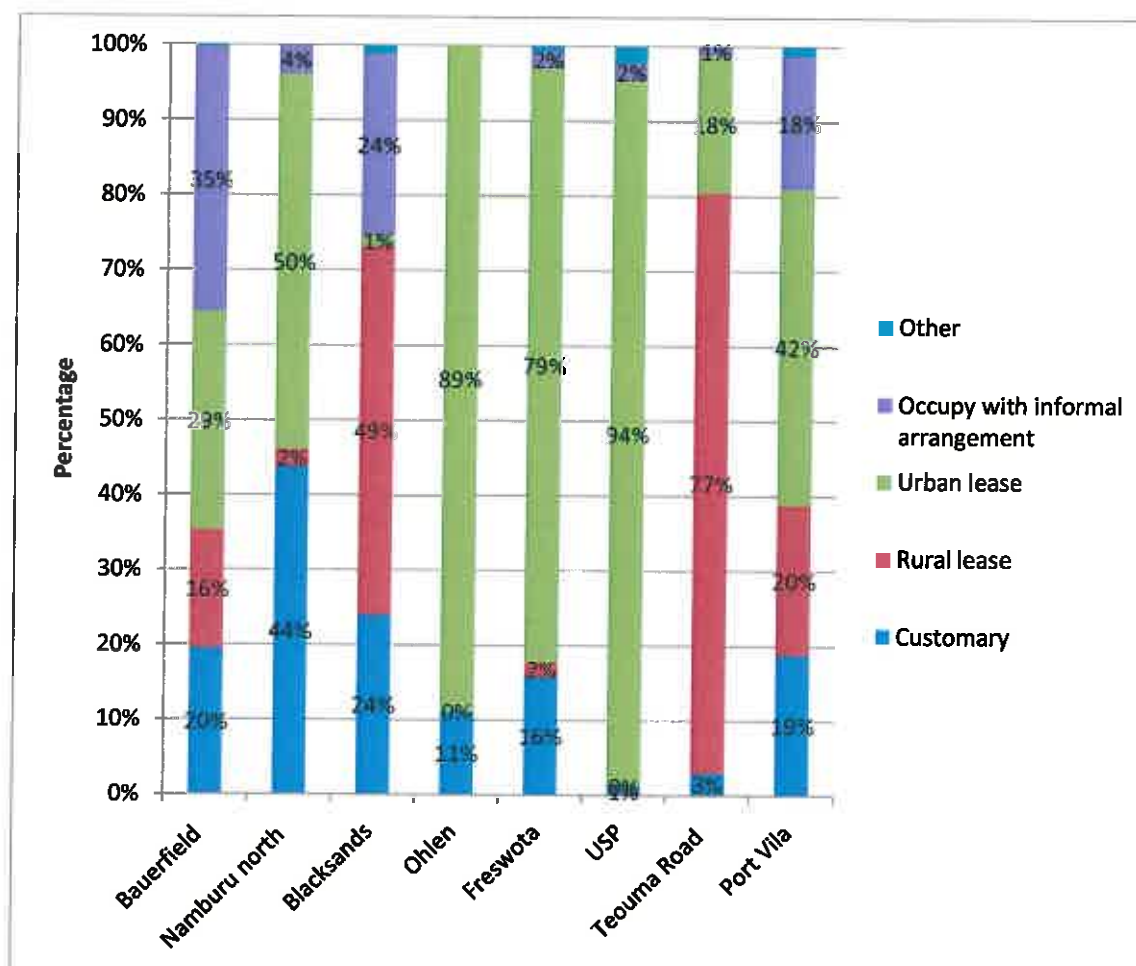
5.3.4 Land tenure

Based on the national census figures, the majority of households in Vanuatu (72%) resided on customary land, 11% lived on occupied land with no informal arrangement and 7% and 6% lived on urban and rural land leases.

Forty eight percent of households in the urban areas had urban leases, 18% rural leases, another 18% customary leases and 13% occupied land with informal arrangement.

For the fastest growing areas in Port Vila, the graph below provides a breakdown of land tenure for the fastest growing areas.

Figure 17: Land tenure for Port Vila and fastest growing areas



The land tenure reflects the urban/rural location of the census area. For example the areas of Bauerfield, Blacksands and Teouma have a greater proportion of rural leases reflecting their location outside the municipal boundaries. The areas of Bauerfield and Blacksands also have a higher proportion of residents occupying land by informal arrangement.

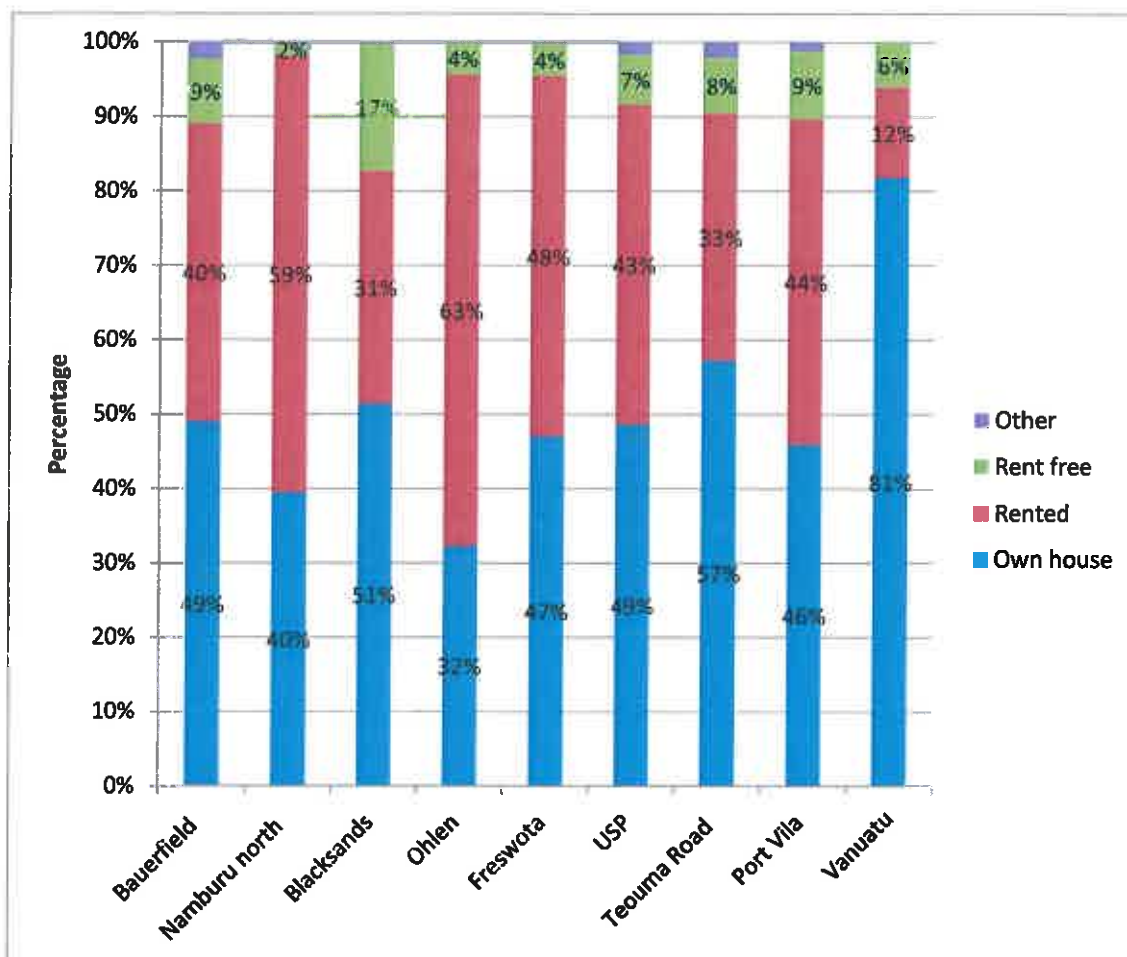
Further discussion of land tenure as a driver for growth is found in Section 7.2.2.

5.3.5 Dwellings – age and tenure

Based on the national census figures, the majority of households in Vanuatu (81%) owned their dwelling outright, 12% rented their dwelling and 6 % stayed in rent free dwelling. The proportion of households renting was highest in the urban areas with 39%. SHEFA province had the highest proportion of people renting (28%) compared to the other provinces.

For the fastest growing areas in Port Vila, the tenure of buildings is shown in Figure 18.

Figure 18: Building tenure in Port Vila and fastest growing areas



This shows that the fastest growing areas have similar building tenure figures to Port Vila generally. In Port Vila 46% of residents owned their own home, 12% rented and 6% lived rent free. Namburu North, Ohlen and Freswota had a higher figures compared to Port Vila for residents renting (ranging from 48 to 59%). Blacksands was the only fast growing area with higher rates of residents living rent free.

Based on the national census figures, about:

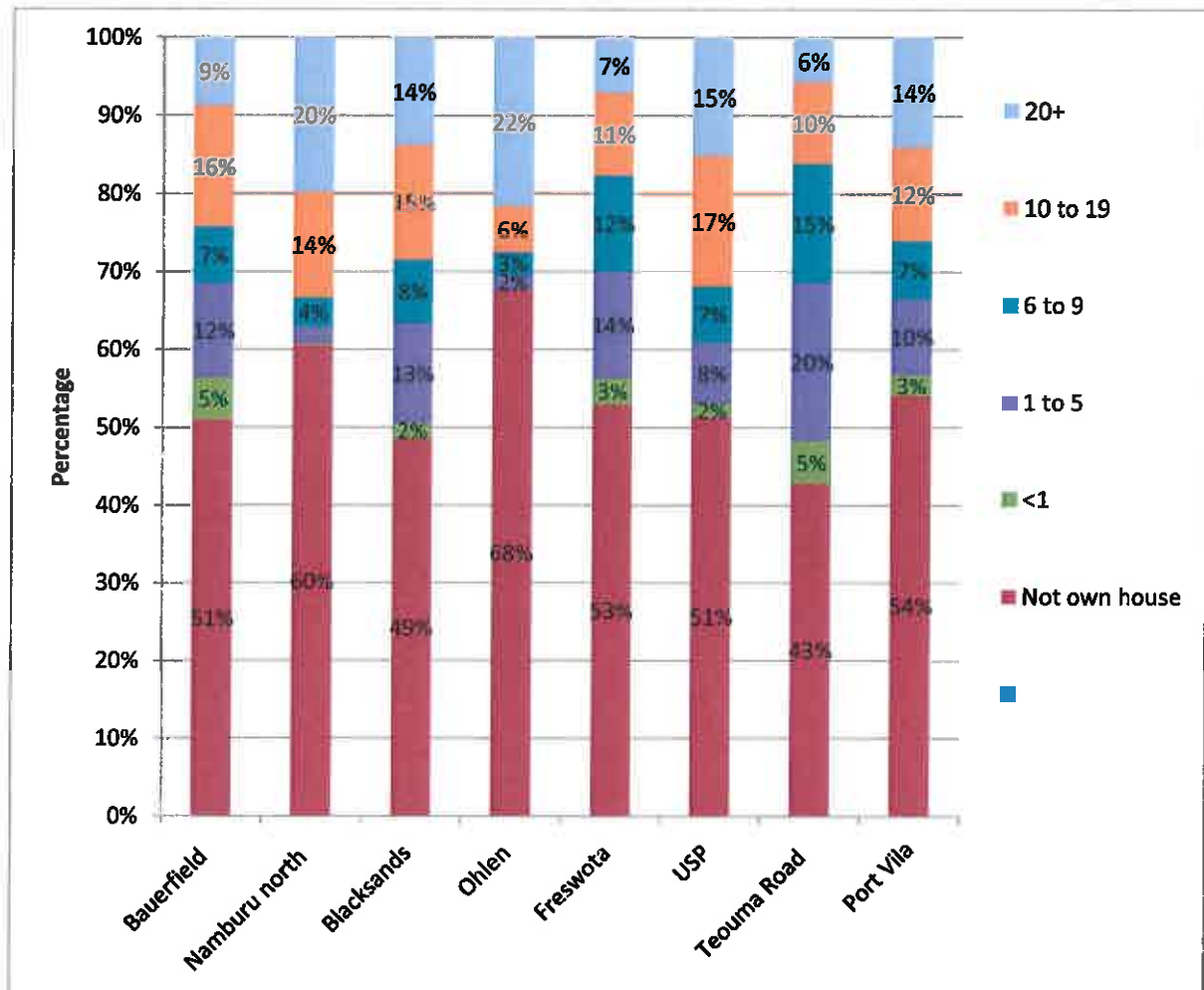
- 40% of all dwellings in Vanuatu were between 1 and 5 years old,
- 22% between 6 to 9 years,
- 17% between 10 to 19 years,
- 13% 20 years or older; and
- 7% were recently built, and less than 1 year old.

Most dwellings in the urban areas were 10 years and older.

The age of a dwelling is one indicator of new development in an area. This could be an additional dwelling for existing residents or a dwelling for residents moving into an area.

For the fastest growing areas in Port Vila, the age of dwellings is shown in Figure 19.

Figure 19: Age of dwellings in Port Vila and fastest growing areas



This shows that each of the fastest growing areas differ in the age of dwellings. This is a reflection of the age of the areas. For example, Ohlen is an older established area and Teouma Road is newer. The age of the dwellings corresponds with the information provided by stakeholders during discussions.

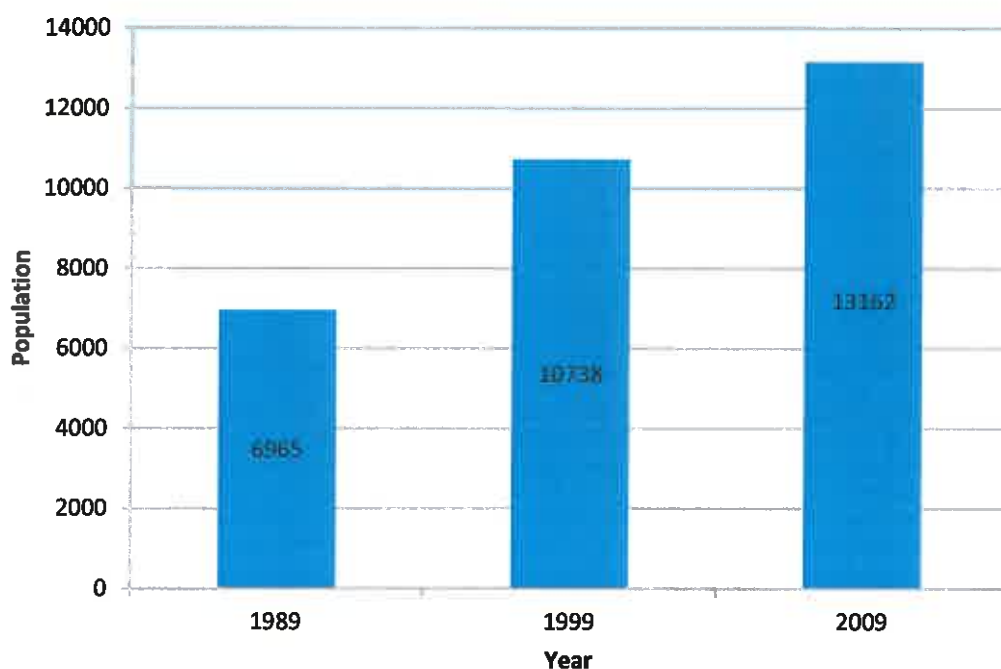
6 Urban Growth Trends for Luganville

Luganville is the second largest urban centre in Vanuatu. The town has generally grown along the coast and around the Simonsen Wharf and BP Wharf. Development appears to have been geographically constrained on the western side by a ridgeline, to the north by the swampy land and physical barrier of the Sarakata River, a steep escarpment adjacent to Solway and to the east by the Santo-Pakoa International Airport.

6.1 Historical growth of Luganville

Luganville's population in the last census (2009) was 13,162, an increase of 22.5% on the previous census result (10,738 in 1999). In 2009 the population of Luganville formed 5.6% of the country population. Figure 20 shows the increase in population for Luganville between 1989 and 2009.

Figure 20: Luganville population for 1989, 1999 and 2009²⁶



Using the census data for 1999 and 2009, the following population growth indicators for Luganville have been mapped:

- Population change (the total population increase over the period);
- Population growth rate (the rate of growth in population over the period); and
- Population density (the number of persons per hectare).

The location of the enumeration areas can be found on Figure 21.

The change in population between 1999 and 2009 is shown on Figure 22. This maps the total number of additional people in each of the Luganville census enumeration areas. The area shown in pink did not have any data for the 2009 census and therefore could not be mapped. The largest population increases were in Sarakata, Pekoa and the area to the east of the airport which includes Ban Ban. These areas experienced an increase of over 500 people during the 10 year period. The

²⁶ Source: Vanuatu National Statistics Office website.

black dots on the plan indicate the dwellings recorded at the time of collecting the 2009 census²⁷. These dwelling points indicate that the population is concentrated in certain areas rather than being spread uniformly across an enumeration area. For example, the area to the east of the airport experienced an increase of 1,083 people between 1999 and 2009 however the majority of this population is largely concentrated in the area of Ban Ban.

Population growth as an average percentage per year for each census enumeration area is shown on Figure 23. The area shown in pink did not have any data for the 2009 census and therefore could not be mapped. The percentage represents the growth in population per year relative to the number of people in each of the enumeration areas. The areas experiencing the greatest growth (of over 40% per year) are located immediately to the east of the town centre. These areas had a combined population of 238 in 1999 which increased to 1,360 in 2009.

The population density for each census enumeration area is shown on Figure 24. This has been calculated by dividing the land area of each census unit by the total population within that unit. The area shown in pink did not have any data for the 2009 census and therefore could not be mapped. The highest densities in the town (of between 30–40 persons per hectare) are generally in the areas immediate surrounding the town centre and within the municipal boundaries. The densities in the town are still relatively low compared to Port Vila where the densest area of Tongoa/Futuna has around 250 people per hectare.

Section 6.3 discusses the characteristic of the fastest growing areas in Port Vila and Luganville including where people are from and their land tenure status.

²⁷ These are GPS co-ordinates provided in the GIS files provided as base data for the project.

Figure 21: Location of Census Enumeration Areas for Luganville

Figure 22: Population change in Luganville between 1999 and 2009

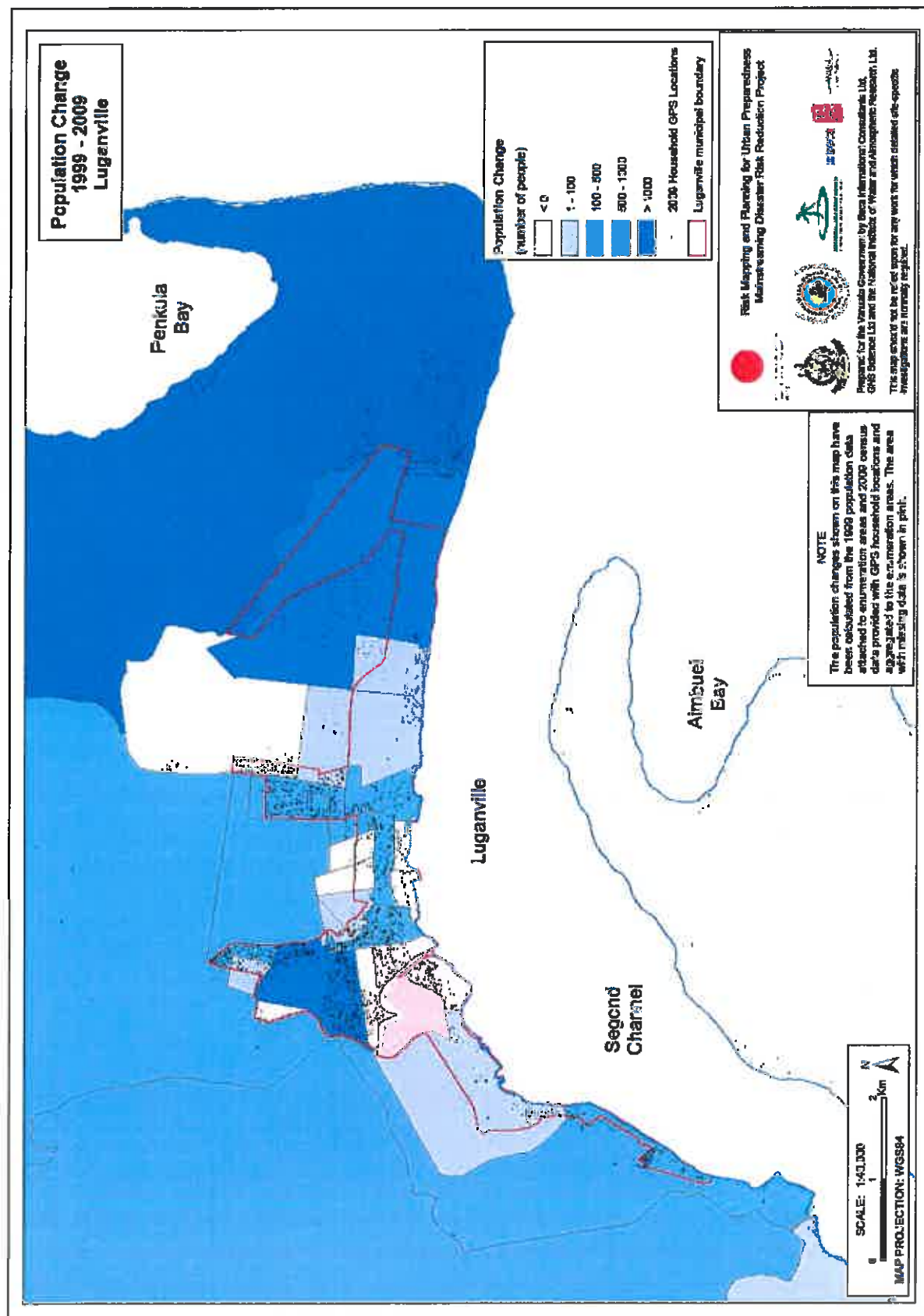


Figure 23: Population growth in Luganville between 1999 and 2009

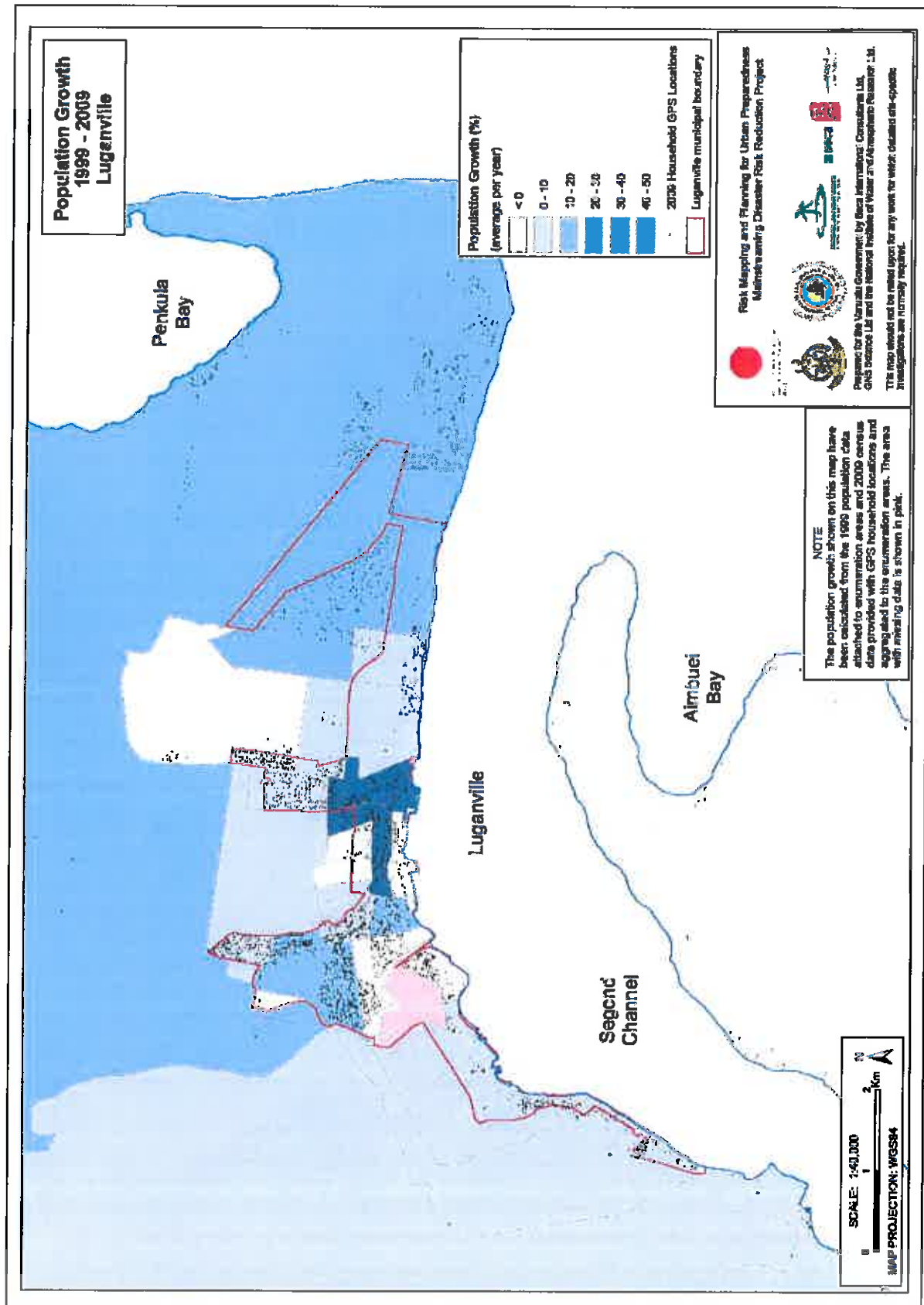
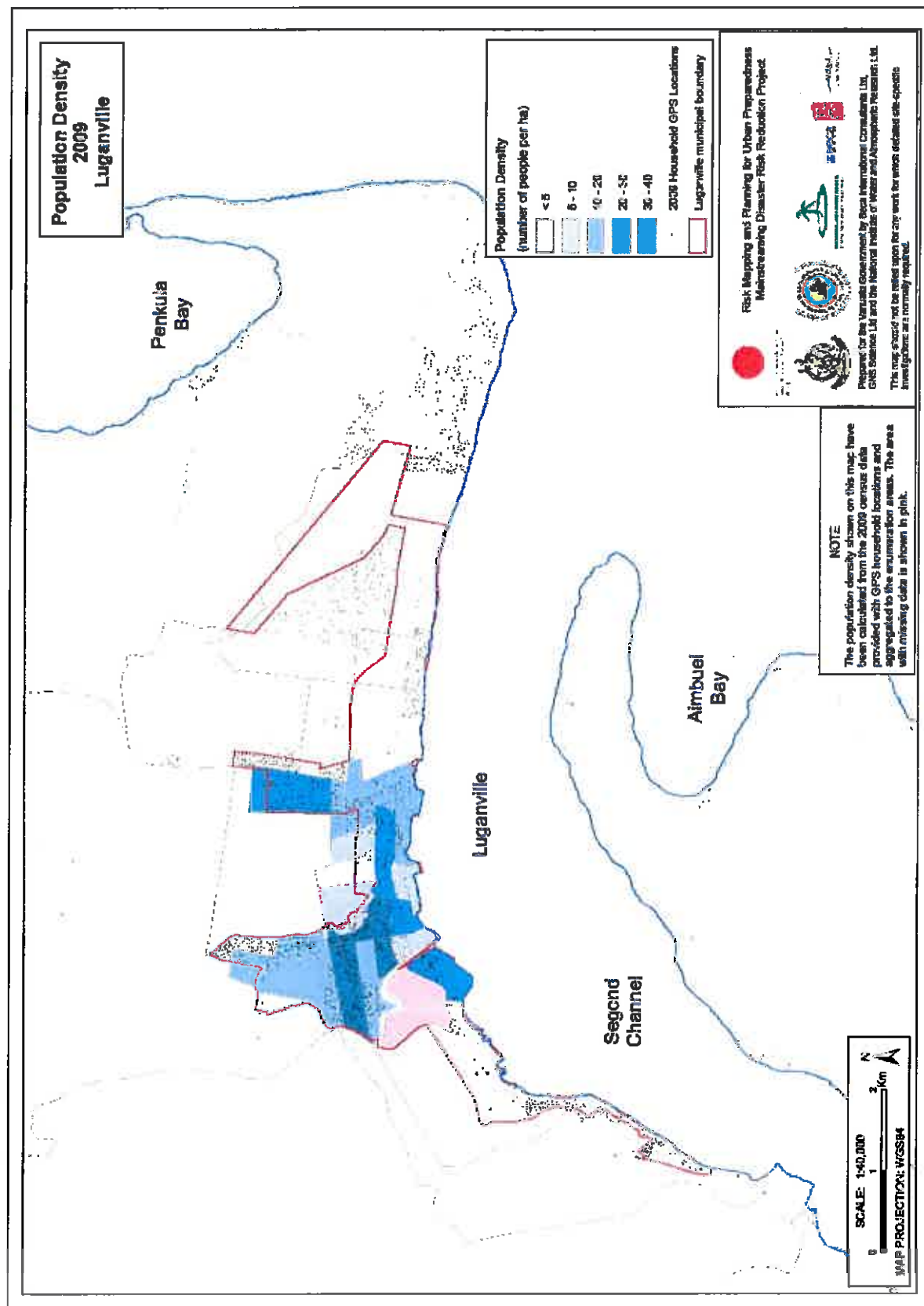


Figure 24: Population density in Luganville



The fastest growing areas in Luganville have been determined by examining the total population increase over the period and areas that have experienced significant growth in population. The following parameters have been used to determine the fastest growing areas in Port Vila:

- Population increase of more than 500 over the 1999 – 2009 period. This captures all areas that have experienced significant population increase through either through in-migration or natural growth. Enumeration areas 420 (Ban Ban), 910 (Sarakata), 920 (Solway) and 929 (Pekoa) meet this parameter.
- Areas with a population over 500 people where the population more than doubled over the 1999-2009 period (ie. greater than 10% per year). There are no additional areas that meet this parameter.

Using these parameters, the areas in Table 4 have been identified as the fastest growing areas in Luganville.

Table 4: Fastest growing areas in Luganville

EA	Enumeration Area Name (if known)	1999 Population	2009 population	Population increase since 1999	% growth per year
420	Ban Ban	712	1795	1083	15%
910	Sarakata	503	1125	622	12%
920	Solway	434	1013	579	13%
929	Pekoa	487	1020	533	11%

Based on this, the fastest growing areas of Luganville are located in the more informal areas located alongside the Sarakata River and the area around the airport. This aligns with anecdotal comments from key stakeholders.

The fastest growing areas in Luganville have a combined have a total population of 4953 or 30% of the total population of the greater Luganville area (which was 16595 in 2009). This represents 11% of the population for the Sanma province (which was 45,855 in 2009).

6.2 Key features of Luganville affecting population growth

There are several features of Luganville that affect how and where the city is growing. These include landownership arrangements, the location and characteristics of informal settlements, the areas of business and employment and the key transport routes in the city. These features are discussed in the sections below.

6.2.1 Land ownership in Luganville²⁸

Land within the Luganville municipal area was acquired by the State from the customary landowners following Vanuatu's independence in 1980. The State leases urban land to lessees.

Planning permission for each lease is initially governed by the Department of Lands through the category or class of lease (i.e. residential, industrial, commercial etc.), and then by the Municipality (e.g. types of commercial activity). Outside of the municipality in the greater Luganville area, land

²⁸ The discussion in this section is sourced from World Bank 2015.

management is the responsibility of the Sanma Provincial Government Council, with customary landowners having the ultimate control over land use.

There are no customary lands within the Luganville municipal boundary as land is either freehold or state land although an option under land legislation no state land has ever been converted to freehold. The responsible agency for lease transfers in urban areas is the Department of Lands which has an office in Luganville.

Further discussion of the influence of land tenure on urban growth is provided in Section 6.3.4 of this report.

6.2.2 Informal settlements in Luganville

Many of the fastest growing areas of the town contain areas of informal settlement (eg. Sarakata and Solway) or they started out as informal settlements and the land tenure arrangements have subsequently been formalised (eg. areas in Pekoa). Many of the newer informal settlements are on land with disputed tenure around the formal boundaries of the city.

It is not possible to accurately measure the number of people who live in the informal settlements of Luganville from census data as the enumeration boundaries do not align with the boundaries of the settlements. The only populations that can readily be measured are those of Sarakata and Solway.

The main informal housing settlements in Luganville are set out in Table 5.

Table 5: Informal settlements in Luganville²⁹

Settlement	Residents	History and tenure
Mango	People from all islands	This was originally a Vietnamese settlement. People in this area came to Santo from all over Vanuatu, to work on Ballande Vanuatu's plantations, docks, stores and ships. Government-owned and has been sub-divided, individual lots leased to different people.
Pepsi	Most people from the Banks Islands, Ambrym, Pentecost or Paama	This quite large settlement on the Sarakata River bank grew mainly through political patronage. Government-owned, mix of 31.44 hectares leased into 1000m2 plots with some of remaining land (39.6 hectares) squatting with no lease agreements. The Government has tried unsuccessfully to relocate people from this area due to the high flood risk.
Sarakata	People mainly from northern islands	People moved to settle this area mainly because space was available and the Luganville Municipality could not enforce regulations to maintain it as a water reserve. Some households pay land rents; others are squatters. Government-owned, no lease agreements.
St Michel	People mainly from northern islands	Community living with consent on church-owned land. The community pays the Church rent
Solway	Unconfirmed	Solway is located on higher ground and is an area that is popular because of the plantations occurring there. Government-owned, 36.1 hectares no formal lease agreements.
Ban Ban	Unconfirmed	Located on custom land surrounding the airport.

²⁹ The information from this table was sourced from Chung and Hill 2002, World Bank 2015 and supplemented with information from a key stakeholder workshop held on 13 August 2015.

The problems associated with informal settlements in Luganville are more to do with vulnerability with locations subject to flooding as well as the typical problems associated with such settlements (access to services, overcrowding etc).³⁰

The area of Pepsi (within the Sarakata census area) is the most contentious of the informal settlements. The settlement is informal in that the people living there do not have development permission or a lease with the Government over the land they are occupying. It is located within the water conservation area – and so no development should be occurring in the area. It is on Government land and has spread across the municipal boundary. This area was classed as a 'disaster zone' before independence and is an area known to be subject to existing flood risk.

Pepsi started as an informal settlement for low income people. However, as time has passed more permanent housing is appearing and people are moving to the area from higher income brackets because there is no cost to living there. While informal, part of the area has been serviced with the provision of a road, power and water (i.e. it has been 'subdivided'). The photographs below show a typical dwelling and street in the Pepsi area.



Typical dwellings in Pepsi (Source: Author)



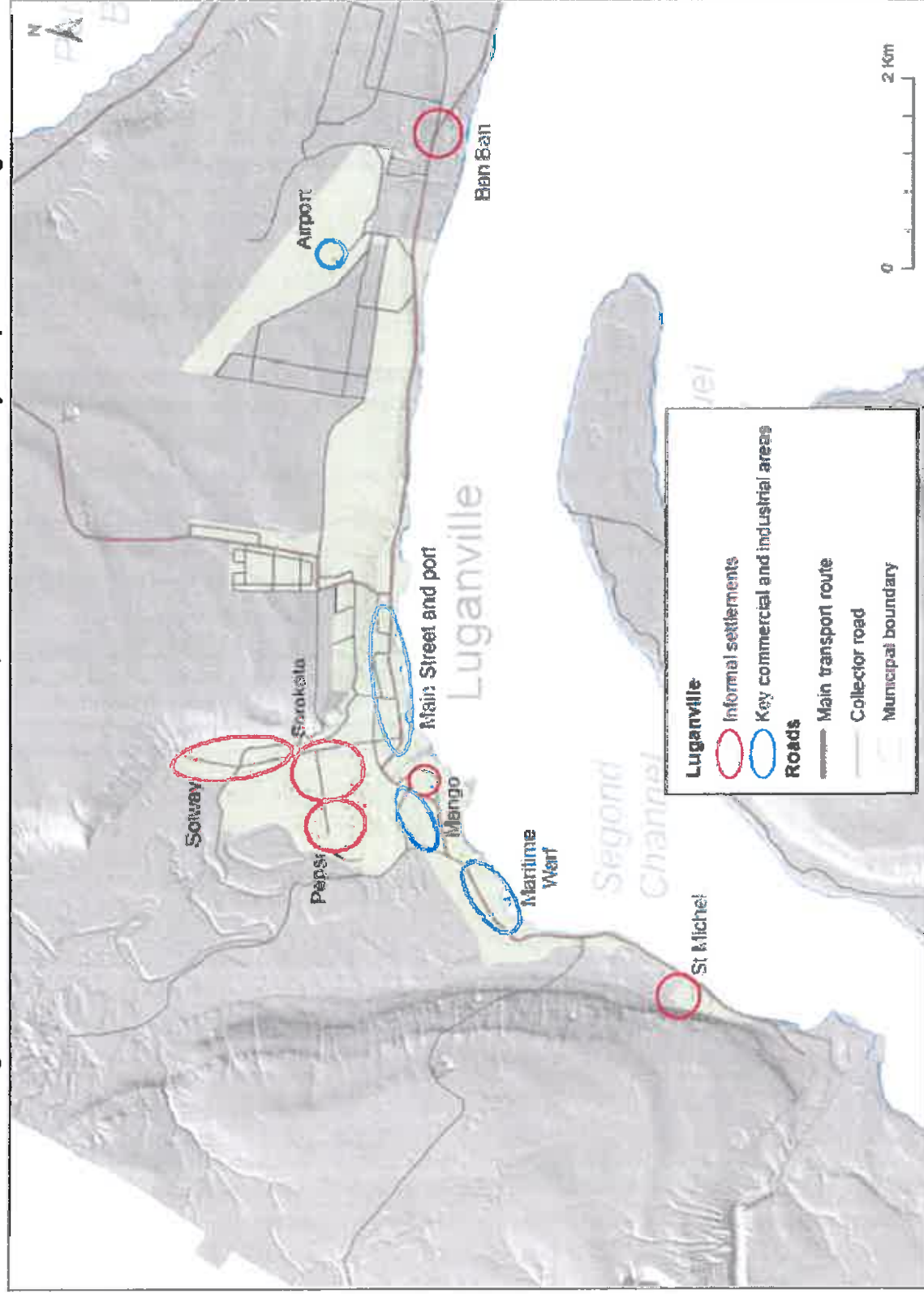
Typical street in Pepsi (Source: Author)

Some politicians are trying to address growth within informal settlements by allocating land elsewhere. However, the new areas have been subdivided and will be developed with lease arrangements with the Government but they are not as low cost as the existing informal settlements and therefore the uptake of the new lots has been slow.

The locations of the informal settlements of Luganville are shown on Figure 25.

³⁰ World Bank, 2015.

Figure 25: Location of Informal settlements, commercial areas and key transport routes in Luganville



6.2.3 Centres of employment and industry

Luganville is the only town on Espiritu Santo Island and is therefore the market centre for the island and in effect, the main administrative and economic centre for the northern provinces of Vanuatu³¹. The main economic activities within Luganville are wholesaling, retailing, banking, restaurant and hotel related businesses in the town and along the waterfront

Luganville has three wharves. The main wharf is managed by the Northern Islands Stevedoring Company (NISCOL) and is where large freighters, ships and the occasional cruise ship (about 8 per year) dock³². The town is one of Vanuatu's busiest ports, especially as a trans-shipment point for copra and cacao. Recently, there has been an increase in the amount of cocoa and copra through the town's Simonsen Wharf with 50% of Vanuatu's production of copra being handled here³³. Ship services are now regular and ship calls to Simonsen remain high with an average of 10-15 weekly ship calls.

The main street that runs through Luganville contains most of the commercial businesses in the town. The main street contains the port at one end and the markets and municipal council building at the other.

The town is also served by Santo-Pekoa International Airport. This is Santo's main airport and is located on the north eastern edge of Luganville, about 6 kilometres from the town centre. It is the main feeder airport for access to northern islands

Both the port and the airport are important employment and commercial areas for the town.

Figure 25 shows the main commercial and industrial areas of the town. The established residential areas of the town have concentrated near the main commercial and industrial areas.

6.2.4 Transportation and accessibility

Luganville has a legacy of well-built roads in the central area of Luganville dating from World War Two. Luganville's main road was built during the second world war and runs from the Simonsen wharf at the east end to the municipal market at the other and has been continued over the Sarakata River towards the south. There are various feeder roads off this main street. In total, there are about 20 kilometres of paved road in the urban area and 50 kilometres of gravelled road³⁴.

The town is relatively compact (compared to Port Vila) and therefore walking is a primary means of transport. Taxis, buses, and public transport trucks provide service in and around town.

The Department of Public Works is responsible for all public roads in Santo including those in the Luganville Municipal Council area. The main roads and some feeder roads in Luganville are sealed and are largely in reasonable condition. The state of the sealed roads within the municipality boundary are serviceable in a large part to good roadside drainage³⁵.

Figure 25 shows the key transport route for the town.

³¹ World Bank, 2015.

³² World Bank 2015.

³³ World Bank, 2015.

³⁴ World Bank, 2015.

³⁵ World Bank, 2015.

6.3 Characteristics of fastest growing areas

This section examines the socio-economic characteristics of the fastest growing areas in Luganville using data from the 2009 population and household census. The raw data was sourced from the Vanuatu Department of Statistics. This was only available for the Luganville town area (rather than the greater Luganville area) and so data for the wider Ban Ban area is not available. The remaining areas of Sarakata, Solway and Pekoa area examined in this section.

The characteristics of the fastest growing areas are examined to identify whether there are any particular features of the areas that differ from the general population

6.3.1 Household size

The average household size (number of people per household) for the urban areas of Vanuatu is 4.8 persons.

There are a total of 2,565 households in Luganville. The average household size in Luganville is slightly higher than the national average at 4.9 persons per household. Some areas in the town have significantly higher rates than the average, with household average occupancy up to 9.8 persons.

The average household size for the fastest growing urban areas (as identified in the first half of Table 4) is shown in the table below.

EA	Area	Population	# of Households	Household size
910	Sarakata	1125	226	4.9
920	Solway	1013	202	5.0
929	Pekoa	1020	219	4.6
	Luganville	12808	2565	4.9

The areas have similar average household size as the country average. Noticeably, Pekoa has a lower household occupancy rate. This may in part be due to the lower population density rates for this area.

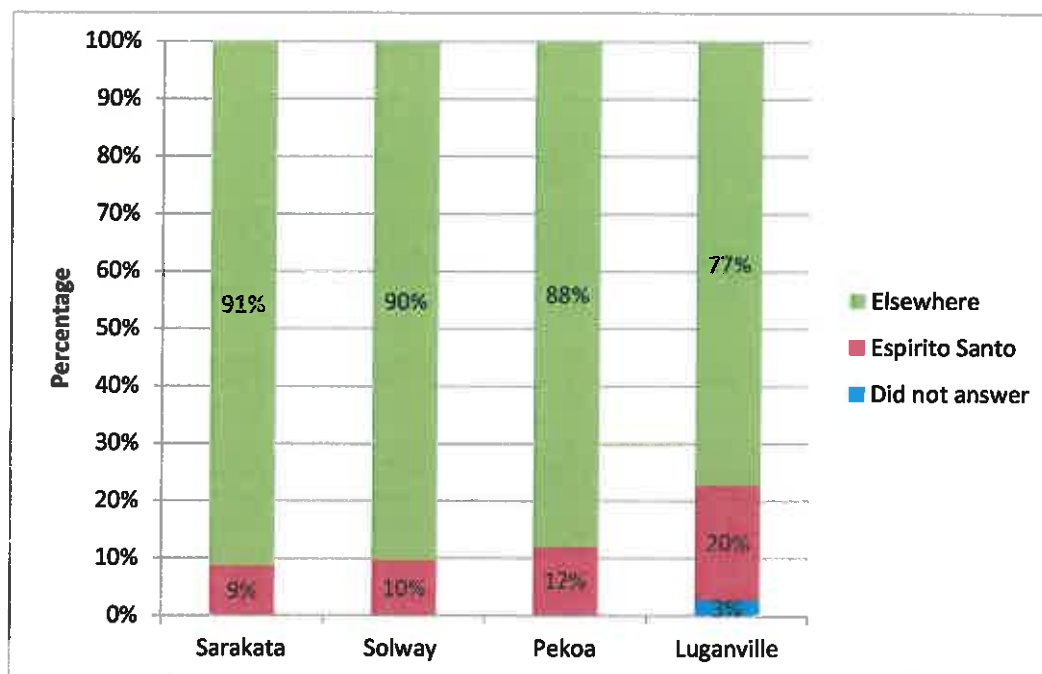
6.3.2 Mobility

Mobility indicates where people have come from, how long they have lived in the area and how much of the growth experienced is due to internal migration and what is due to natural growth in an area.

The 2009 census asked people where they were from. The general figures for Luganville indicate that 63% of respondents indicated that they are from elsewhere in Vanuatu or another country and 22% identified that they are from Esipritu Santo. Given that the immigration rates in Vanuatu are so low, it is likely that those who identified that they are from elsewhere are likely to be from elsewhere in Vanuatu.

Figure 26 shows where people in the fastest growing areas and Luganville are generally from.

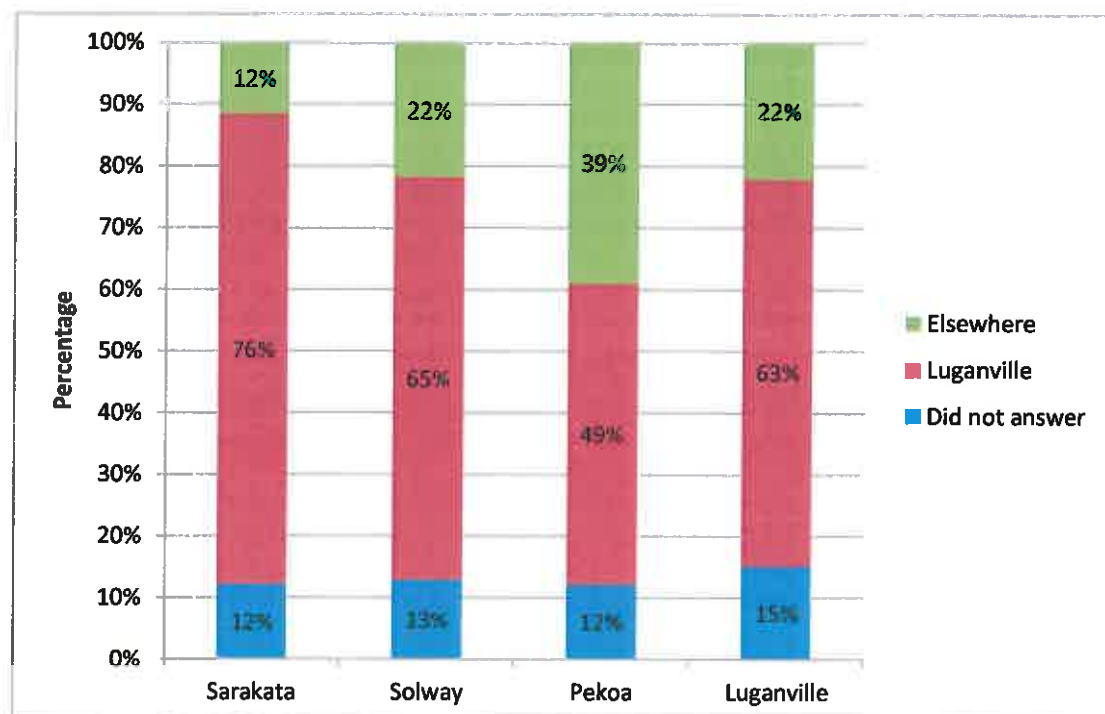
Figure 26: Where people in Luganville are from



This indicates that a greater proportion of people living in the fastest growing areas are from elsewhere in Vanuatu (ranging from 88-91%) compared to the general figure for Luganville.

As part of the census, residents were also asked to identify whether they had lived in the same village or place as they did five years previously. Figure 27 shows where people in the fastest growing areas and Luganville generally identified that they lived 5 years previously.

Figure 27: Where people in Luganville lived 5 years previously



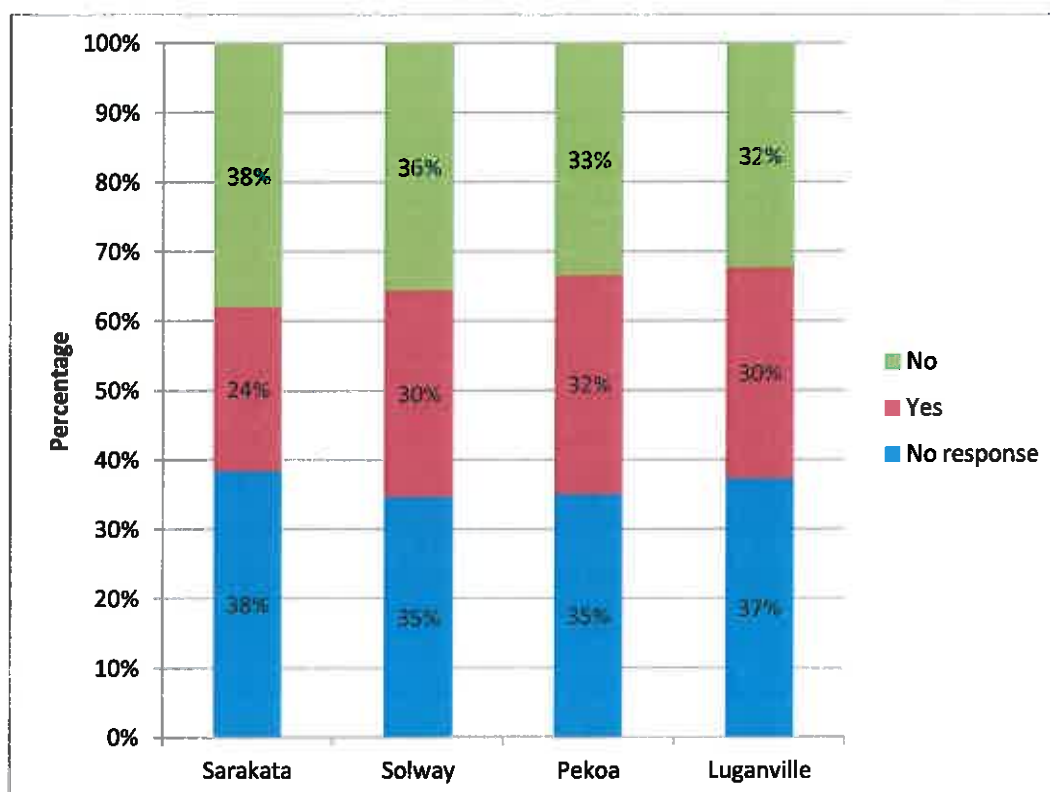
This shows that for Sarakata and Solway, the majority of the residents lived in Luganville previously, with only 12% and 22% identifying that they lived elsewhere. In contrast, in Pekoa, 39% or 454 of the residents identified that they did not live in Luganville 5 years previously.

6.3.3 Employment

Based on national employment figures from the census, 18,016 (43%) of the paid workers in Vanuatu are located in the urban areas (Port Vila and Luganville).

The employment figures for Luganville and the fastest growing areas are shown in Figure 28.

Figure 28: Employment status for Luganville and fastest growing areas



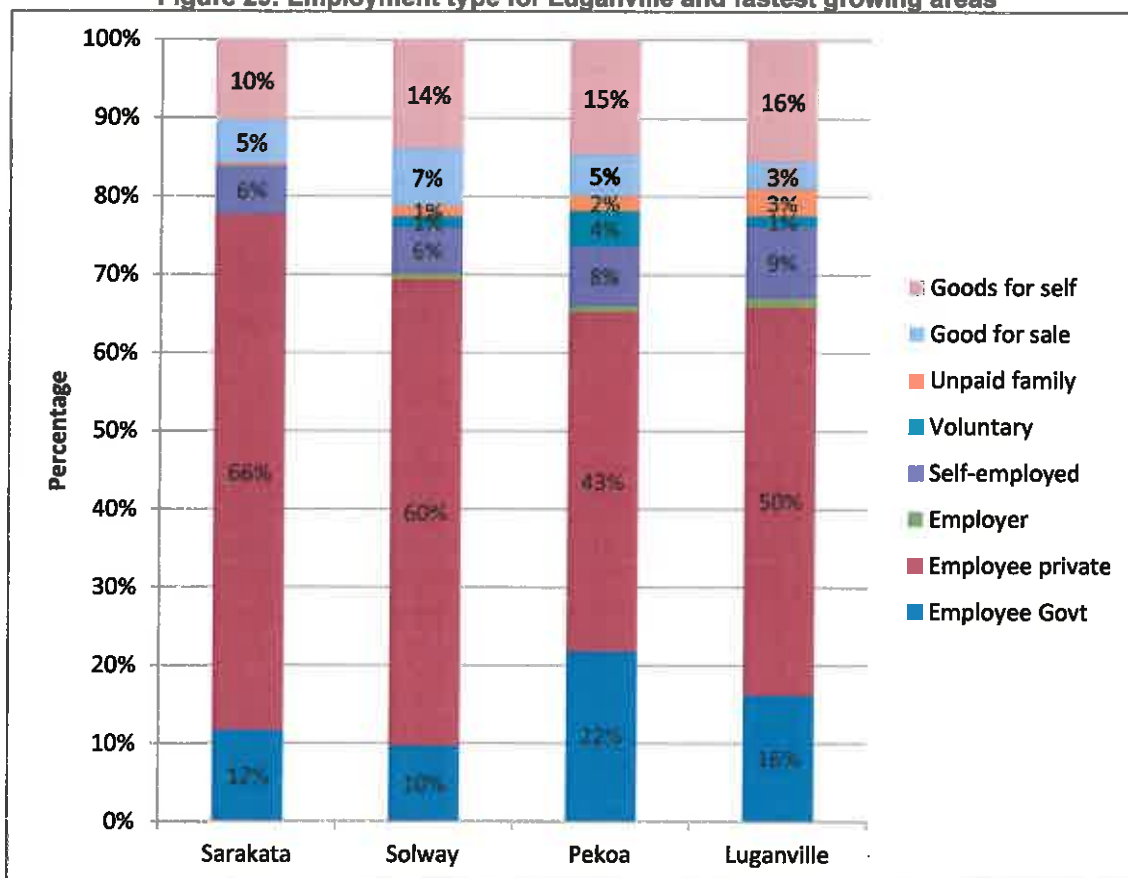
This shows that the employment status for the fastest growing areas does not differ markedly from the general figure for Luganville.

For work type, the national census figures show that about 47% of all people in paid employment were working for a private enterprise (19,886) which is comprised of 18,517 private employees and 1,369 employers. Another 24% produced goods for sale (10,046), 15% were working in the public service (6,489), and 14% were self-employed (5,874).

In the urban areas, the figures are different and only 3% of all people in paid employment in the urban areas produced goods for sale while 64% of urban paid workers worked as private employees.

For the fastest growing areas in Luganville, the employment figures are affected by the large percentage of respondents (up to 74%) that did not answer the employment questions. The graph below provides a breakdown of employment type for the fastest growing areas where the respondent provided information.

Figure 29: Employment type for Luganville and fastest growing areas



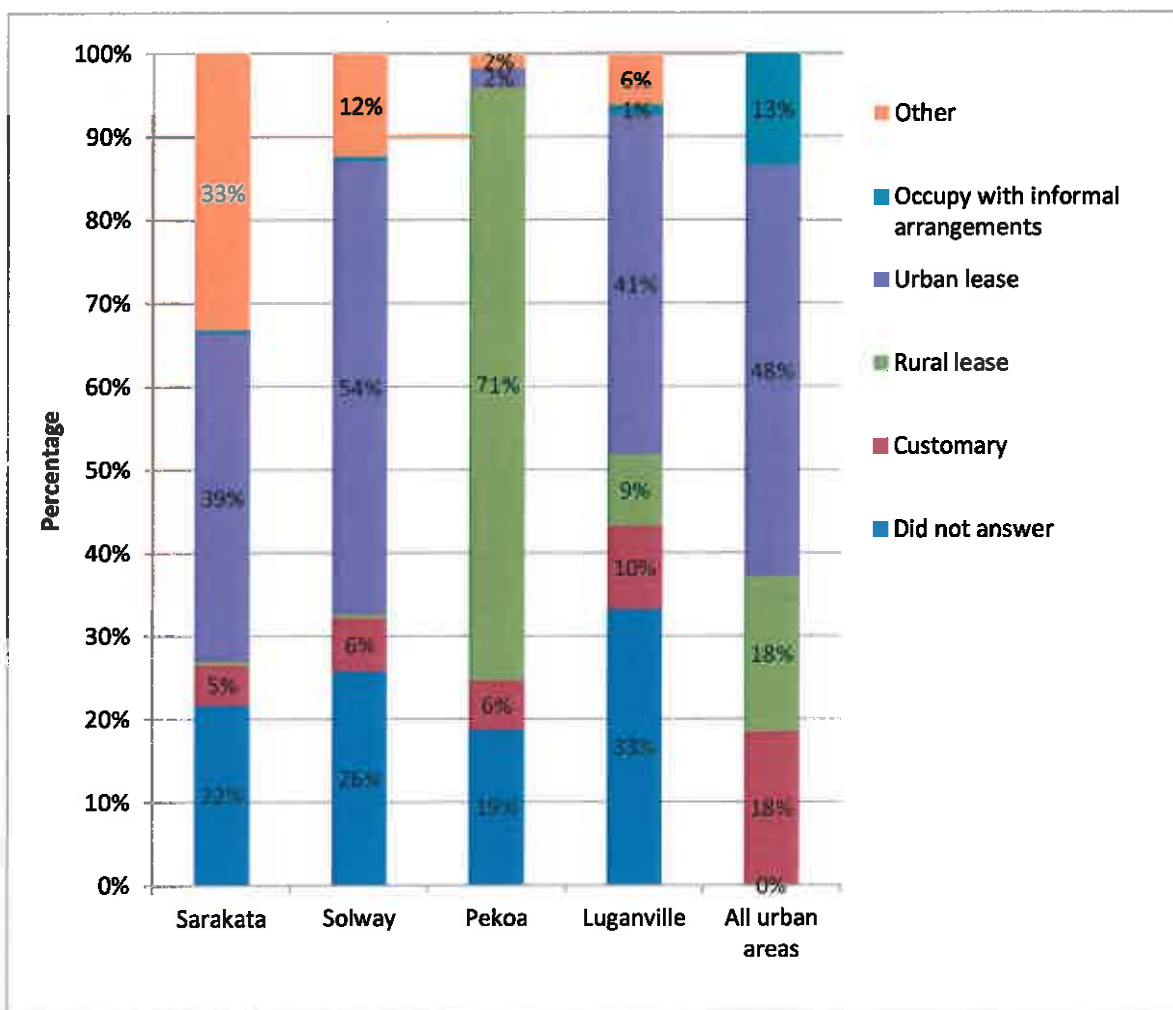
This shows that the employment type for the fastest growing areas does not differ noticeably from the general figures for Luganville. The areas of Sarakata and Solway do have a higher proportion of residents that are in private employment with 66% and 60% respectively against a figure of 50% for Luganville generally.

6.3.4 Land tenure

Based on the national census figures, the majority of households in Vanuatu (72%) resided on customary land, 11% lived on occupied land with no informal arrangement and 7% and 6% lived on urban and rural land leases. For the urban areas, 48% of households in the urban areas had urban leases, 18% rural leases, another 18% customary leases and 13% occupied land with informal arrangement.

The graph below provides the breakdown of land tenure for the fastest growing areas in Luganville compared to the national figure and that for all of Luganville.

Figure 30: Land tenure for Luganville and fastest growing areas



Based on the census data, the fastest growing areas in Luganville have a lower level of occupation under informal arrangements than other urban areas in Vanuatu. The figures may be affected by the large proportion of people who did not respond to this question.

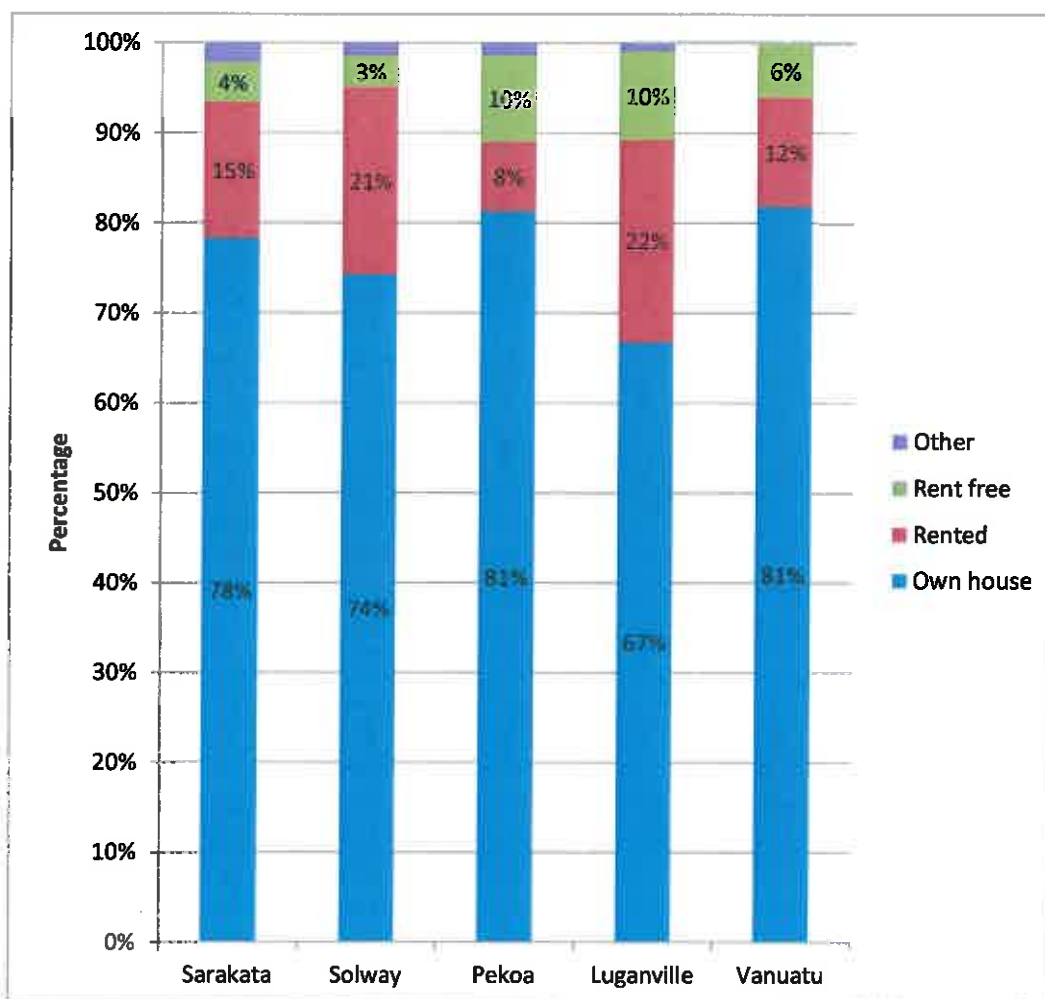
The land tenure reflects the urban/rural location of the particular census area. For example the Pekoa area has much greater proportion of rural leases which reflects its location outside the municipal boundary.

6.3.5 Dwellings – age and tenure

Based on the national census figures, the majority of households in Vanuatu (81%) owned their dwelling outright, 12% rented their dwelling and 6 % stayed in rent free dwelling. The proportion of households renting was highest in the urban areas with 39%.

For the fastest growing areas in Luganville, the tenure of buildings is shown in Figure 31.

Figure 31: Building tenure in Luganville and fastest growing areas



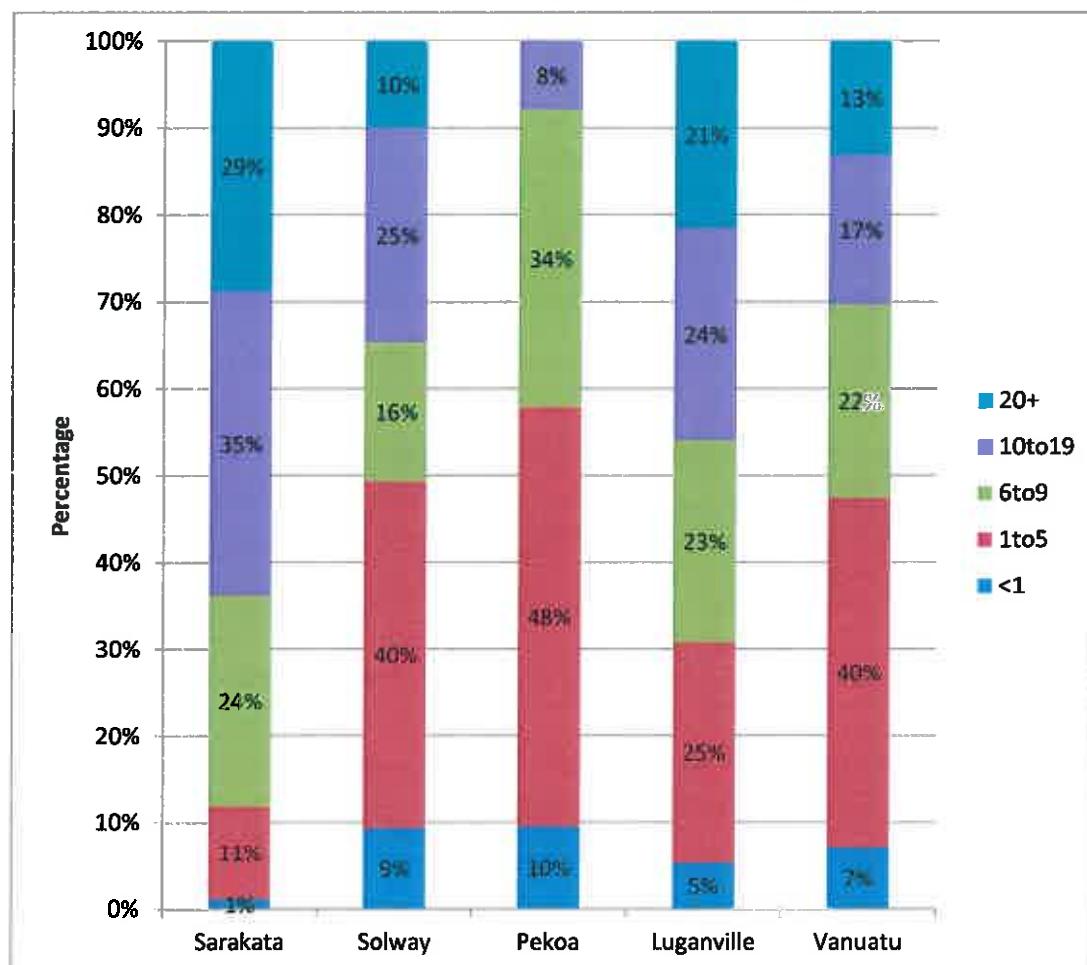
This shows that the fastest growing areas are generally similar to the national building tenure figures rather than the general Luganville figures. In particular, more people in the fastest growing areas identified that they own their own dwelling (ranging from 74 – 81%) compared to the average for Luganville (which is 67%).

Some of the areas of Luganville that are not growing as rapidly have even a higher percentage of people that own their own home. These range from 80-100% ownership.

Based on the national census figures, about 40% of all dwellings in Vanuatu were between 1 and 5 years old, 22% between 6 to 9 years, 17% between 10 to 19 years, 13% 20 years or older and 7% were recently built, and were less than 1 year old. Most urban dwellings were 10 years and older.

For the fastest growing areas in Port Vila, the age of dwellings is shown in Figure 19.

Figure 32: Age of dwellings in Luganville and fastest growing areas



This shows that in both Solway and Pekoa, there is a greater proportion of new dwellings (ie. within the previous 5 years). For Pekoa in particular, there are no dwellings identified as being older than 20 years. This means that all of the dwellings in this area have been constructed in the last 20 years. Sarakata has a greater percentage of older dwellings than the town and national average. This is a reflection of the age of this area.

7 Drivers for Urban Growth Patterns

The growth statistics for Port Vila and Luganville set out in sections 5 and 6 only tell part of the story about where and why the urban areas are growing. This section examines the reasons for different urban land use patterns in Port Vila and Luganville and the underlying causes of faster growth in some areas compared to others. This includes the reasons why people locate in informal settlements within the Port Vila municipal boundary and the settlements located in the peri-urban periphery/provincial area custom lands that are outside the municipal boundaries. The discussion in this section has been informed by discussions with stakeholders, observations of the project team, the Vanuatu Household Income and Expenditure Reports for 2006 and 2010 and previous relevant studies.

The key drivers include internal migration to urban area, land ownership and access to land, access to employment opportunities and the existing development framework.

7.1 Internal migration to urban areas and natural growth

The 2010 Household Income and Expenditure Survey (HIES) suggests that Port Vila and the rural areas have benefited from the general economic growth in Vanuatu. This growth is led by tourism, favourable commodity prices, increasing overseas remittances and infrastructure investment. Luganville has not had access to the same opportunities. At the same time the population of the northern municipality has increased, with migrants not moving into their own houses but staying with other households, making poor households in Luganville larger than other households in Vanuatu.

The 2010 HIES found that, overall, 32% of households moved because of work related reasons, with this increasing to 53% of households in urban areas. This could involve a number of work related reasons including a household member getting a job and the household moving (or a new household established), a voluntary move to live closer to the place of work, a transfer to another location, or even the pay from work giving the household enough money to move. 34% of households moved for 'other' reasons. These could include retiring from work, the purchase or acquisition of land and/or a house, or other issues 'pushing' households out of areas. 20 households in Port Vila provided natural disaster as the reason for their move but the report did not expand on what the specific concerns stated were (i.e. which hazard).

Sections 5.3.2 and 6.3.2 discuss the mobility of the fastest growing areas in Port Vila and Luganville. In Port Vila, a greater proportion of people living in the fastest growing areas indicated that they are from elsewhere in Vanuatu (ranging from 79-92%) compared to the general figure for Port Vila (which is 63%). The exception is Blacksands which had only 47% of residents that come from elsewhere in Vanuatu. In Luganville, a greater proportion of people living in the fastest growing areas indicated that they are from elsewhere in Vanuatu (ranging from 88-91%) compared to the general figure for Luganville (which is 63%). These figures indicate that the fastest growing areas have attracted people who have moved from other areas in the country to the urban areas.

Interestingly, while many of the residents in the fastest growing areas are from elsewhere in Vanuatu, many are not recent arrivals to the areas. As set out in Sections 5.3.2 and 6.3.2, the fastest growing areas in Port Vila and Luganville have a similar number of residents that identified that they lived somewhere else 5 years previously as the general figures for the urban areas. Interestingly, Blacksands has a higher proportion of residents that lived in Port Vila (70%) previously than the general Port Vila figure of 56% and conversely, in Pekoa, 39% of the residents identified that they did not live in Luganville 5 years previously compared to 22% for the general Luganville figure. These figures reflect the age of the developments in these areas, with Blacksands dating back to the 1960's, while Pekoa only undergoing development in the last 20 years (based on building age data from the 2009 census).

The figures indicate that some of the fastest growing areas are not receiving growth solely due to internal migration. The large existing population bases in many of these areas (eg. Bauerfield with 6609 residents and Freswota with 6475) mean that the areas will continue to grow at a faster pace than areas with a lesser number of residents due to natural growth. The number of births in Vanuatu was estimated at 7,335 in 2009. This accounts for a crude birth rate (CBR) of 31.3 per 1000 of population. Based on this, the fastest growing areas will experience annual population increases from births alone as follows:

Port Vila			Luganville		
Area	Population	# of births	Area	Population	# of births
Bauerfield	6609	207	Sarakata	1125	35
Namburu north	1511	47	Solway	1013	32
Blacksands	7111	223	Pekoa	1020	32
Ohlen	1180	37			
Freswota	6475	203			
USP	864	27			
Teouma Road	2807	88			

Over a 10 year intercensal period the contribution of births to the population in an area, particularly the areas with larger existing populations is likely to be substantial. This means that these areas will continue to experience population growth based on natural growth.

7.2 Land ownership and access to land

7.2.1 Land and building affordability

The results of the historical growth trends assessment for greater Port Vila and Luganville shows that growth is occurring fastest in the peri-urban areas and particularly the areas of informal settlement and areas with less formal land access arrangement. These settlements are lower income areas and the fast pace of growth is likely therefore to be linked to land and building affordability. People are moving to these areas to be close to family, because of the low/no cost of development and to have areas for plantations.

The informal settlements in Port Vila and Luganville generally have a lower standard of living, including cheaper housing, a lack of sanitation and a larger number of people per hectare of land (i.e. higher density). A household survey conducted as part of a study into informal settlements in Vanuatu found that the informal settlements are diverse communities. Some households evidently are materially very poor and many have difficulty meeting their basic needs³⁶. But some households live quite comfortably, mainly the longer-term residents with sufficient security of tenure to build permanent dwellings, with some members in cash employment. As set out in Sections 5.3.3 and 6.3.3, the employment status and employment type for the fastest growing areas in Port Vila and Luganville does not differ markedly from the general figures for the general urban areas.

The land development sector tends to target the high income market (including expatriates and international investors) and it is less common for subdivisions to be targeted at the low-middle income ni-Vanuatu market³⁷. The cost of formal, serviced subdivisions is beyond the means of most residents looking to shift from informal areas into areas with greater land tenure certainty. The

³⁶ Chung and Hill, 2002.

³⁷ World Bank 2015.

subdivisions providing for the lower end of the market generally start at around 1 Million vt and increase to around 1.5-1.8 Million for the medium level market³⁸. The 2010 Household Income and Expenditure Survey (HIES) found that the average household income in Port Vila was 104,100 vt and 74,100 vt in Luganville³⁹. While dated, a Vanuatu Poverty Report found that 27% of urban households had a monthly income of less than 2000 vt and 61% have monthly incomes of less than 4,000 vt⁴⁰. A lack of supply of affordable formal plots and access to finance has meant that some low to middle income earners have had no choice but to live in informal settlements⁴¹. Therefore informal settlements include waged employees who cannot afford to enter the urban housing market.

There has been a slow uptake of formal government provided subdivisions in Port Vila and Luganville. For example, in Luganville the government established a subdivision as part of the strategy to encourage residents of the Pepsi area to relocate. Stakeholders spoken with identified that the uptake of the lots has been slow. This is likely to be because, even though residents have uncertain land tenure where they are, they have the benefit of cheaper living costs. There is therefore little incentive to shift to a formal subdivision.

7.2.2 Land tenure

Land tenure arrangements in Vanuatu take four broad forms. These are

- registered freehold title
- legally rent land through native or kastom procedures
- informal residency agreements with the private land owners
- reside on (predominantly government/state) land illegally in informal settlements.

Based on national leasing data, in 2010 there were approximately 13,815 current leases, covering 9.3 percent of the total land area in Vanuatu. Out of that total, 7,010 (or 51%) are urban leases in Port Vila and Luganville (over government-owned land), comprising 1 percent of the land under lease in Vanuatu, and 6,803 are rural leases over customary land, comprising 99 percent of the land under lease⁴². The proportion of rural leases granted in comparison to urban leases has been steadily increasing.

Sections 5.3.4 and 6.3.4 of this report discuss the land tenure arrangements for the fastest growing areas in Port Vila and Luganville. This indicates that the land tenure arrangements reflect the location of the areas relative to the municipal boundary. In Port Vila, the areas of Bauerfield, Blacksands and Teouma have a greater proportion of rural leases reflecting their location outside the municipal boundaries and the areas of Bauerfield and Blacksands also have a higher proportion of residents occupying land by informal arrangement. In Luganville, the fastest growing areas have a lower level of occupation under informal arrangements. The land tenure arrangements also reflects the urban/rural location of area. For example, the Pekoa area has much greater proportion of rural leases.

A recent World Bank study notes the practice in which investors lease large tracts of primary agricultural land and subsequently subdivide and sell it for residential purposes is an issue of concern for custom landholders⁴³. Out of the 13,813 active leases in Vanuatu, 5,420 were identified

³⁸ Based on discussion with land agents, land development agencies and discussion with stakeholders.

³⁹ UNDP, 2010, Page 25.

⁴⁰ Sourced from Chung and Hill, 2002.

⁴¹ World Bank 2015.

⁴² Stefanova, M.R. Porter and R. Nixon, 2012

⁴³ Stefanova, M.R. Porter and R. Nixon, 2012

as subdivisions, the majority of which are over peri-urban and rural land on the main island of Efate. Based on discussions with stakeholders there are a number of subdivisions underway or proposed particularly to the east of the city in the Teouma-Tassiriki corridor.

There is a difference in the steps involved in, and time and costs incurred by low, middle and high income households to access land for housing by formal or officially sanctioned land procedures, and through informal land procedures. This has an influence over where people choose to live. For those on higher incomes and regular/reliable incomes, there is a greater choice of location than those with lower or sporadic incomes who are unable to access land with secure tenure. Low income households have fewer choices available due to resource constraints including access to affordable home-ownership and availability of commercial credit for housing.

7.3 Access to land and the development framework

The Government will not allow leases over Government-owned land until the plots are adequately serviced with water, electricity, drainage and sewage. On the other hand, municipal councils have insufficient resources to provide these services. As a result, the process of legalising housing plots leases is too slow to keep up with demand. This restricts people from investing in better housing and encourages the creation of informal settlements.⁴⁴

The lease creation process has recently been overhauled with an amendment of the Land Leases Act. The Act sets out formal steps to create leases and was amended to strengthen the role of customary institutions in determining land ownership, reducing the jurisdiction of the formal court system to determine ownership of customary land. Under the lease creation process, the first step is an application for a Negotiator Certificate. This does not trigger the appropriate planning policy as, although the Physical Planning Unit check the lease against zoning, because the zoning plans are only draft, they have no legal weight. There is currently also no consideration of the nature of the lease and whether the land is appropriate for that type of use based on susceptibility to natural hazards (such as flooding, tsunami, cyclones, etc).

Based on discussions with stakeholders, the current lease creation process can take a considerable length of time. One landowner spoken with had applied for a lease soon after the amendments came into effect in late 2013 and was still waiting for his Application for Negotiator Certificate to be approved by the Land Management and Planning Committee.

In contrast, to build a dwelling on custom land where you have the approval of the landowner is an easier process. The landowner's approval is often verbal and there are few records of land occupation as a result. Those occupying land can pay an annual rental to the landowner or exchange good in kind.

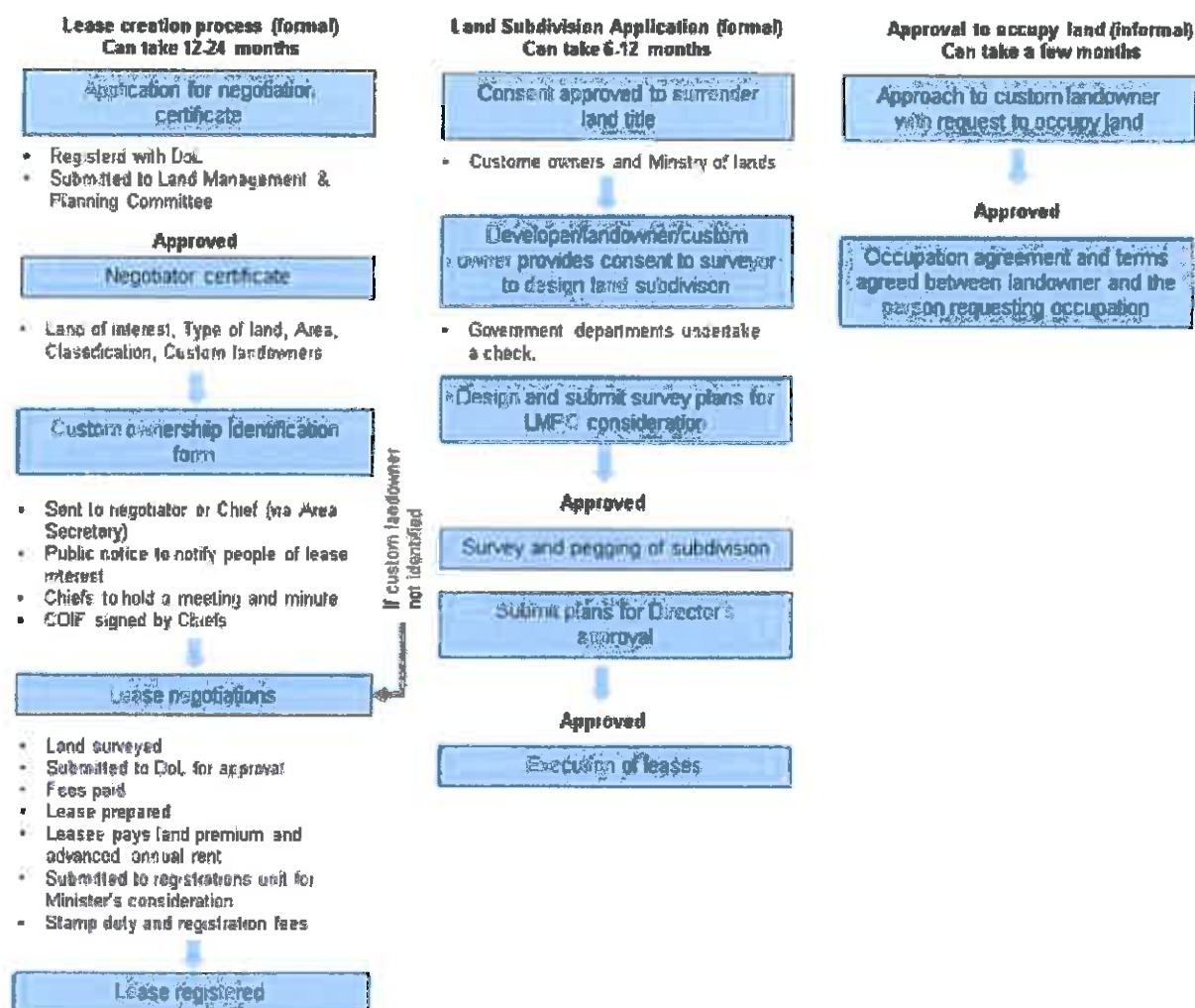
The subdivision process for the land development sector can take between 1-2 years depending on the complexity of the subdivision itself.

Figure 33 provides a general comparison of the steps and time taken for formal subdivision, formal lease and approval from a custom land owner to reside on land⁴⁵.

⁴⁴ Chung and Hill, 2002.

⁴⁵ This figure has been created from available information and discussions with key stakeholders. It is indicative only.

Figure 33: Steps taken for access to land



The steps and time taken for the formal development framework acts as a disincentive to formalising land tenure and encourages the uptake of less formal land tenure arrangements and the creation of informal settlements.

A recent World Bank study examined in details the issues associated with land governance in Vanuatu⁴⁶. It identified the key issues as follows:

- Environmental and social impacts of leasing are routinely neglected
- Custom landholders often negotiate from a position of disempowerment
- Group rights are disregarded and custom landholders poorly identified, leading to frequent disputes
- Ministerial power over disputed land used more broadly than intended
- Determination of land values is variable and inconsistent
- Lease creation process is unregulated and easily abused
- Lease conditions are not monitored and enforced
- Land records are often missing, incomplete, and in poor condition

⁴⁶ Stefanova, M.R. Porter and R. Nixon, 2012

These issues create a barrier for access to land, particularly for low income earners.

7.4 Access to employment opportunities

Both Port Vila and Luganville have historically grown around the key commercial and port areas. Sections 5.2.3 and 6.2.3 discuss the key commercial and industrial areas and how these are changing. These business nodes are places of employment opportunity for low income earners.

In Port Vila, the commercial and industrial areas are expanding and also shifting in response to high rents in the CBD and transportation access issues. Of particular relevance is the recent shift of commercial premises along with the employment created by these businesses to the east of the city. This is occurring at the same time as increased residential growth in this corridor.

Business nodes are scattered throughout the urban areas and their location is influenced by similar divers to residential land with transport corridors and access to land of primary importance. Residential growth in Port Vila (and to a lesser extent in Luganville) is occurring in areas with ready access to main transport routes and where cheaper land or rents can be secured. For example the area of Bauerfield is in close proximity to town (being only a 150 vt bus journey) and is close to industrial and commercial areas. There are a number of newer commercial and industrial developments along the main road between the Tagabe roundabout and the road to Mele. The new middle and high income subdivisions that are opening up around the city have been also located with transport access as a key consideration. These tend to be located in coastal areas (eg. Pango and Tassiriki) and elevated areas with views (eg. Bellevue).

8 Future Growth

This section briefly examines which areas of Port Vila and Luganville are likely to continue growing based on historic growth patterns and the drivers that are shaping growth in the two urban areas.

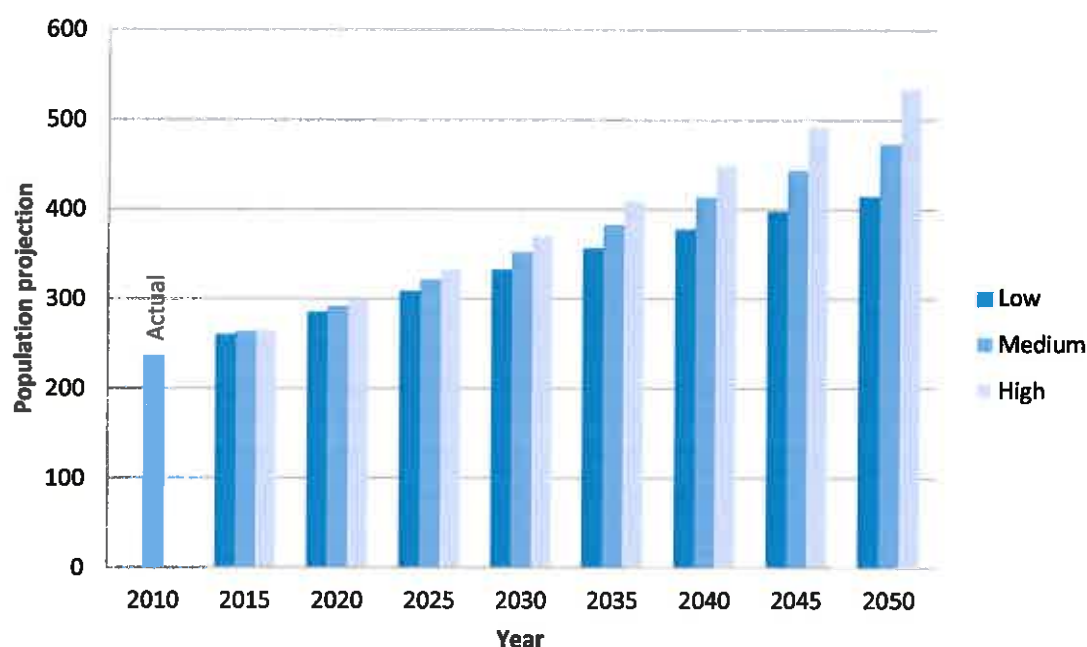
8.1 Population growth projections

Table 6 and Figure 34 set out the low, medium and high population projections for Vanuatu from 2010 until 2050⁴⁷.

Table 6: Decennial Population

Year	Population Estimate		
	Low	Medium	High
2010	N/A	236,299	N/A
2015	261	264	266
2020	286	292	299
2025	309	322	334
2030	333	352	371
2035	357	383	410
2040	378	414	450
2045	398	444	492
2050	415	473	535

Figure 34: Population estimates (low, medium and high)



⁴⁷ Sourced from Population Division of the United Nations Department of Economic and Social Affairs, World Population Prospects: The 2012 Revision, <http://esa.un.org/unpd/wpp/index.htm>

The projections are based on population, fertility, infant and child mortality, life expectancy at birth and international migration.

Based on the information set out in Section 4 of this report, it is likely that population growth is following the higher projection rates and this aligns with the analysis of the 2009 census figures (with an estimate of about 370 thousand people in 2030).

8.2 Which areas are likely to continue growing?

The urban areas of Port Vila and Luganville will continue to experience population growth. In the absence of any change to legislation or socio-economic conditions, land development to accommodate population growth is likely to continue as status quo. This means that the areas likely to experience continued development to accommodate this growth will be those on the periphery of the two urban areas. In Port Vila these are the areas to the east of the city along the Teouma corridor and to the west of the city around the airport and the Mele Flats. In Luganville these are the areas to the east of the town including Pekoa and Ban Ban and the existing informal settlements along the Sarakata River. The growth of Port Vila in particular will continue to spread beyond the municipal boundary and as existing areas fill up or land tenure issues arise, so new areas beyond these will come under pressure for development.

This observation is supported by the findings of historical studies looking at the growth of Port Vila. A 1999 ADB study identified that the then peri-urban areas of Blacksands, Ohlen, Manples and Emtem had experienced substantial growth during the preceding 10 years (from 1989-1999). This growth trends report has identified that the areas beyond Blacksands, Ohlen, Manples and Emtem have experienced substantial growth since that period indicating a general shift outwards.

10 Key findings

This section sets out the key findings of the urban growth trends study that are relevant considerations for the next stage of the Risk Mapping and Planning for Urban Preparedness Project. This includes the preparation of the Urban Risk Management Strategy and the Stakeholder Participation and Communications Implementation Action Plan.

10.1 Port Vila

1. The population of Port Vila at the last census (2009) was 44,040, an increase of approximately 50% on the previous census result (29,356 in 1999). The city is growing at a rate of 4.1%. This growth is occurring predominantly outside the Port Vila municipal boundaries. The population in the central city and older areas has remained relatively stable with growth likely to predominantly natural growth.
2. Population growth is greatest on the periphery of the city; to the east along the Teouma corridor and to the west around the airport and the Mele Flats. The growth is associated with predominantly lower income residential development including some areas of informal settlement.
3. Land development is occurring throughout the greater Port Vila area. Subdivisions catering to the higher end of the market are occurring close to town.
4. Density is greatest in the older informal or less formal settlements in the municipal boundaries. Without reticulated sewage system these areas have limited capacity to absorb additional growth. Never the less, the population of these areas is continuing to grow due to natural growth and people moving into areas to stay with family. This pattern of growth is likely to continue in the future.
5. Future growth of the city is expected to continue on land outside the municipal boundary where access to land is easier in regards to time taken to access land and is a lower cost. Accessing land through the formal lease and subdivision process can take a significant period of time. This results in a reluctance to enter into the formal development process. Therefore, future growth is expected to continue on land outside the municipal boundary where access to land is easier in regards to time taken to access land and is a lower cost.
6. Lack of housing affordability within municipal boundaries is causing growth on the periphery. The will continue to spread beyond the municipal boundary and as existing areas fill up or land tenure issues arise, so new areas beyond these will come under pressure for development.
7. Businesses are moving out of the central city due to the high rental costs and ease of access. This pattern is likely to continue as population growth gives rise to greater demand for corresponding commercial development.
8. The draft zoning plan for Luganville has not yet been gazetted and therefore has little influence over current land development applications.

10.2 Luganville

10. The population of Luganville at the last census was 13,162, an increase of 22.5% on the previous census result (10,738 in 1999). The town is growing at a rate of 2%, only slightly above the rate for the country's rural areas. The growth of the town is tied to natural growth rather than internal migration.

1. Urban growth is occurring outside the municipal boundaries on land around the airport and Ban Ban and in the informal areas located alongside the Sarakata River. Development with the agreement of the custom landowners is likely to continue to occur outside the municipal boundaries.
2. Custom land issues appear to have a greater influence over land development in Luganville compared to Port Vila.
3. There are areas of informal settlement that are already subject to high risk of flooding. The government has identified some land as a possible location to relocate residents from areas subject to flooding however progress to acquire the land has been slow and it is likely uptake would be slow as there is little incentive to shift.
4. The masterplan for Luganville is more advanced than the draft zoning plan prepared for Port Vila, however it too has not been gazetted and therefore has little influence over current land development applications.

11 References

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Appendix A

Port Vila data table

Population data table for Port Vila

EA	EA Name	Census Year		Land area (ha)	Total population change 1999-2009	Population growth	Average % per year	Density (persons/ha)
		1999	2009					
801	Bauerfield	3186	6609	557.39	1413	107%	11%	12
802	Tagabe Central	363	460	3.66	97	27%	3%	136
803	Tagabe north	586	881	31.31	295	50%	5%	28
804	Agathis East	763	825	20.16	62	8%	1%	41
805	Tagabe South	340	287	15.01	-53	-16%	-2%	19
806	Malapoa college	484	709	43.52	225	46%	5%	16
807	Agathis West	986	1243	19.69	257	26%	3%	63
808	Tebakor pressing	364	204	9.26	-160	-44%	-4%	22
809	Namburu north	880	1511	13.51	631	72%	7%	112
810	Namburu south	218	555	18.78	337	155%	15%	30
811	Melcoffe	12	77	5.85	65	542%	54%	13
812	Stade	564	637	20.13	73	13%	1%	32
813	Georges Pompidou	426	604	25.56	178	42%	4%	24
814	Bouganville north	200	425	17.32	225	113%	11%	25
815	Post Office	17	19	8.96	2	12%	1%	2
816	Bouganville south	86	43	3.43	-43	-50%	-5%	13
817	Court house	256	347	31.03	91	36%	4%	11
818	Burns Philip	134	102	21.80	-32	-24%	-2%	5
819	Independence park	462	285	19.06	-177	-38%	-4%	15
820	Vila East	184	539	8.24	355	193%	19%	65
821	Ex British prison	408	155	3.77	-253	-62%	-6%	41
822	Vila central hospital	293	505	20.56	212	72%	7%	25
823	Tongoa/Futuna	895	713	2.89	-182	-20%	-2%	247
824	Seaside Paama	606	655	6.84	49	8%	1%	96
825	Colardeau	147	282	29.43	135	92%	9%	10
826	Nambatu West	161	359	20.43	198	123%	12%	18
827	Nambatu East	713	604	23.25	-109	-15%	-2%	26
828	Public Works	478	287	18.28	-191	-40%	-4%	16
829	Nambatri West	705	359	141.60	-346	-49%	-5%	3
830	Honda farm	388	512	26.29	124	32%	3%	19
831	Nambatri East	649	420	30.71	-229	-35%	-4%	14
832	Hotel Le Lagon	49	69	23.78	20	41%	4%	3
835	Blacksands	4744	7111	283.89	1367	30%	5%	25
836	Seven star	543	1010	15.63	467	86%	9%	65
837	Ohlen	661	1180	12.85	519	79%	8%	92
838	Namburu central (Simbolo)	1641	1464	12.82	-177	-11%	-1%	128
839	Jack fong	306	308	14.26	2	1%	0%	22
840	Freswota	2628	6475	120.21	3847	146%	15%	54
841	USP	395	864	39.35	469	119%	12%	22

842	Le merdien	236	229	37.32	-7	-3%	0%	6
843	Teouma Road	625	2807	424.52	2182	349%	35%	7
844	Pango Road	328	541	37.51	213	65%	6%	14
845	Nambatti North	219	425	20.16	206	94%	9%	21
846	Malapoa Point	27	136	90.89	109	404%	40%	1
847	Malapoa Estate	349	208	11.72	-141	-40%	-4%	18
	Not stated	651				0%	0%	
	Total	29356	44040	2362.65	15335	8%		19

Areas within the Greater Port Vila Area

EAID	Enumeratio	Census_99	Census2009	EA_Area_ha	Population Change	Average % per year	Density
712	Mele Bay 712	652	1509	907.16	857	13	1.7
713	Mele 713	676	783	41.98	107	2	18.7
714	Melektree 714	250	967	5706.44	717	29	0.2
715	Chris Soles 715	1242	3929	7322.59	216	23	0.5
716	Erakor 716	1128	2383	1016.38	111	11	2.3
718	Bellevue 718	259	1795	9361.18	593	59	0.2
719	Pango 719	992	1929	345.26	937	9	5.6
720	Worauloa 720	122	270	53.90	148	12	5.0
721	Pango 721	417	376	53.44	-41	-1	7.0
722	Pango 722	6	108	246.65	102	170	0.4
717	Erakor 717	985	2304	388.66	1319	13	5.9
	Total	6729	16353	25443.62492			

Appendix B

Luganville data table

Population data table for Luganville

EA	Enumeration area	Name	Census_99 Population	Area (sq m)	PopDensity	2009_male	2009_female	2009_total	Population growth	% per year	Population change	PopDensi_1
420	Banban 420		712	27	35	925	870	1795	192.11	15.2	1083	67.15
421	IRCC 421		232	60	5	313	259	572	146.53	14.7	340	9.56
463	Beluru 463		422	115	5	393	328	721	70.85	7.1	299	6.29
464	Eken Plantation 464		254	32	11	151	117	268	5.51	0.6	14	8.46
465	Bla 465		293	71	5	241	190	431	47.1	4.7	138	6.07
901	EA 901		513	4491483	151	489	474	963	87.72	8.8	450	214.52
902	EA 902		497	2355780	278	280	239	519	4.43	0.4	22	220.42
903	EA 903		812	281770	3796	408	385	793	-2.34	-0.2	-19	2815.87
904	EA 904		382	503680	999	0	0	0	0	0.0	0	0.00
905	EA 905		154	130733	1554	59	59	118	-23.38	-2.3	-36	903.10
906	EA 906		99	134106	970	134	135	269	171.72	17.2	170	2006.97
907	EA 907		131	94857	1825	140	146	286	118.32	11.8	155	3016.69
908	Lambue 908		1429	101633	18518	152	164	316	-77.89	-7.8	-1113	3110.91
909	EA 909		568	263921	2836	225	230	455	-19.89	-2.0	-113	1724.90
910	EA 910		503	348653	1900	558	567	1125	133.86	13.4	672	3228.46
911	EA 911		370	125495	3883	264	249	513	38.65	3.9	143	4090.00
912	EA 912		64	116042	724	60	44	104	62.5	6.3	40	896.74
913	EA 913		87	217970	528	64	49	113	29.89	3.0	26	518.73
914	EA 914		242	154976	2060	44	40	84	-65.29	-6.5	-158	542.32
915	EA 915		272	118469	3024	75	72	147	-45.96	-4.6	-125	1241.52
916	EA 916		97	262881	487	276	255	531	447.22	44.7	434	2021.05
917	EA 917	French Paddock	58	227423	334	171	167	338	482.76	48.3	280	1487.02
918	EA 918		203	221918	1204	77	27	104	-48.77	-4.9	-99	468.88
919	EA 919		162	180220	1183	57	76	133	-17.9	-1.8	-29	738.42
920	EA 920		434	715431	800	514	499	1013	133.41	13.3	579	1416.68
921	EA 921		459	2283846	265	288	280	568	23.75	2.4	109	248.84
922	EA 922	Lot Nothing	133	160864	1088	105	104	209	57.14	5.7	76	1299.96
923	EA 923		68	102775	876	17	12	29	-57.35	-5.7	-39	282.33
924	EA 924		215	684197	414	126	134	260	20.93	2.1	45	380.23
925	EA 925		714	3047505	309	346	311	657	-7.98	-0.8	-57	215.71
926	EA 926		83	450043	242	254	237	491	491.57	49.2	408	1091.64
927	EA 927		135	863214	206	78	61	139	2.96	0.3	4	161.12
928	EA 928		244	586205	548	120	127	247	1.23	0.1	3	421.60
929	EA 929		487	5168820	124	511	509	1020	109.45	10.9	523	197.45
930	EA 930		1119	497921	2962	661	603	1264	12.96	1.3	145	2539.96
Total			12647	24893134		8576	8019	16595			4330	

Appendix C

Persons consulted during the preparation of this report

Table of persons consulted during the preparation of this report

Person	Organisation	Person	Organisation
Loic Bernier	Caillard and Kaddour	Eloïse Viart	First National Vanuatu
Taimoli Lulo	Tasiriki village	Florence Iautu	PMU, VMGD
Patu Lui	Community	Kalina Kalmari	Area Secretary, SHEFA Province
Jenny Valtoka	Narango community	Joseph Frank	Area Secretary, SHEFA Province
Vuti Takasi	Area Secretary S/Santo	Peter Korisa	NDMO
Chief Teles Moses	Chairman Council	Kaluat Wilson	Pango Area Council
Emil Mele	Hasevia BR	Lawac Rosine	Geology & Mines
Thomsen Fisher	Sanma Province	Jenny Tuasu	Physical Planning Unit
Malon Tasi	Tangoa Island	Allen Sope	PAC Secretary
Song Mele	Tangoa Island	Shingo Yoshiro	SHEFA Province
Andrew Mera	Chief BP Bon	Melep Eugene	PVMC
Francis Mantaktak	Church Leader Mango	Robert Taho	PVMC
Elizabeth Taso	LMC Women's Rep	Linda Peter	SHEFA Province
Marie Wilson	Pepsi Committee	Ian Kalsuak	SHEFA Province
Collen Butcher-Gollach	World Bank Consultant	Tony Atnelo	PVMC Mapping
Robert Lenny	Saint Michel	Michel Kalworai	SHEFA Province
Jenny Toa	LMC	Jerry Sampson	PVMC Planning
Joel Ham	Sarakata Ward Council	Esline Garaebiti	VMGD
James Ramsy	Solway Plante	Tasila Daniel Kalorib	Chairman Tanvasoko (whole of Blacksands, Erakorago, Bladdinier, Ohlen Area Council)
Benjamin Rare	Lamkes	Christopher Tavoia	State Law Office
Leituk Toara	Hasevaia	Kalpukai Roger	Area Secretary
Pune Marai Francis	Principal tetheries	Jimmy Luna Tasong	Chairman Southern Ward
Andrew Ala	LMC	Reedly Tari	Environment Department
Ray Vilvil	LMC	Erickson Sammy	Department of Water
Massing Maheng Jaccquis	LMC	Martin Sokomanu	Lands Survey
Trevor Jenka	LMC	Ruth Samson	Anamburu Ward, PVMC
Norman Mele	Chief Nakere	Ian Iercet	Public Works Department (PWD)
Juliet Sumbe	Sanma Province	Kalara McGregor	ICLIM Project
Batick Jacob	Pepsi	Paul Holper	ICLIM Project
Gina Buletare	LMC Waste Management	Paul Audin	IRCCNH Project
Joel Alpest	Narango	Jeffery Kaitip	PPU, DLA
Teviwoon Piu	Saint Michel	Armstrong Masanga	DESPAC
Tevi Gordon Youth	Saint Michel	Malian Andrew	Area Secretary, SHEFA Province
Ray Packete	B.P.Bon Area	Kathleen Stephen	South Tagoa (SPGC)
Vomule Karai	Saint Michel	Karina Vatu	South Tagoa (SPGC)
Paia Pore	Narango	Sylvain Todman	VMGD

Person	Organisation
Kensley Micah	NDMO
Marie wianny. B	Lugainville East School
Pierre Tamrac	Deputy Head Teacher Luganville East School
Nelly Caleb	DPA Vanuatu
Lelina Martin	Correctional Department
Shirley Johnson	VRCS Santo
James Avocks	LMC
Florence Iautu	PMU, VMGD
Giwen Wells	Lands Department

Person	Organisation
Esline Garaebiti	VMGD
Erickson Sammy	Department of Water
Rex Issachar	LMC
Brian Philips	PMU, VMGD
Elva Sam	Omeli Community (LMC)
Prosper Buletare	Sanma Province
Benuel Tabi	Lands Department
Edward Titipaia	Councillor
Anaclet Philip	DEPC