

Draft Research report – 2022

Policy review – water, sanitation, and hygiene (WASH) and climate change in urban planning systems in Melanesia

Impact and Innovation Grant

Vanuatu, Fiji, Solomon Islands and Papua New Guinea – July 2022



Full research title: Impact and Innovation Grant: Planning for climate-resilient urban water, sanitation and hygiene (WASH) in informal settlements in Melanesia

Research Partners:



With the support of:



Visit our [website](#)

Version history: DRAFT V1, July 2022

Suggested citation: Sanderson, R., Morgan, E., and Souter, R., 2022, *Policy review: WASH & climate change in urban planning systems in Melanesia*. International WaterCentre at Griffith University, Brisbane, Australia

Cover images: Informal settlements in Port Vila, Vanuatu. Photograph captured by R. Sanderson

In ensuring that this report is made available to all relevant stakeholders, IWC and its partners authorises the reproduction of this research report for educational, research and non-commercial purposes, provided that the authors and the source document are properly acknowledged. All other rights for commercial or for profit reproduction or translation, in any form are reserved. Permission to reproduce the document and/or translate in whole, in any form, whether for commercial, profit or non-profit purposes must be requested in writing and directed to the International WaterCentre at iwc_training@griffith.edu.au

CONTENTS

1. Acronyms and abbreviations	iv
2. Introduction	1
2.1. Background	1
2.2. Why focus on WASH and climate change in urban planning?	1
2.3. Purpose and structure of document	1
2.4. A note on terms	2
2.5. Limitations	3
3. Integration, gaps and strengths	3
4. Urban planning in Melanesia	4
5. Port Moresby – Papua New Guinea	5
5.1. Institutional framework for WASH, climate change and urban planning	5
5.1.1. Responsible institutions	5
5.1.2. Policy and legislation for urban planning, WASH and climate change	5
5.2. Formal planning in Port Moresby	9
5.2.1. Role, objectives and vision	9
5.2.2. Alignment with other policies	10
5.2.3. Land rights and tenure	10
5.2.4. Implementation	10
5.3. WASH in urban planning	11
5.4. Climate change in urban planning	12
5.5. Informal settlement in Port Moresby	13
6. Suva – Fiji	15
6.1. Institutional framework for WASH, climate change and urban planning	15
6.1.1. Responsible institutions	15
6.1.2. Policy and legislation for urban planning, WASH and climate change	15
6.2. Formal planning in Suva	20
6.2.1. Role, objectives and vision	20
6.2.2. Land rights and tenure	21
6.2.3. Implementation	21
6.3. WASH in urban planning	21
6.4. Climate change in urban planning	23
6.5. Informal settlement in Suva	24
7. Port Vila – Vanuatu	25
7.1. Institutional framework for WASH, climate change and urban planning	25
7.1.1. Responsible institutions	25
7.1.2. Policy and legislation for urban planning, WASH and climate change	25

7.2.	Formal planning in Port Vila	29
7.2.1.	Role, objectives and vision.....	30
7.2.2.	Alignment with other policies.....	30
7.2.3.	Land rights.....	30
7.2.4.	Implementation.....	31
7.3.	WASH in urban planning.....	31
7.4.	Climate change in urban planning.....	31
7.5.	Informal settlement in Port Vila	32
8.	Honiara – Solomon Islands.....	33
8.1.	Institutional framework for WASH, climate change and urban planning.....	33
8.1.1.	Responsible institutions	33
8.1.2.	Policy and legislation for urban planning, WASH and climate change	33
8.2.	Formal planning in Honiara	37
8.2.1.	Role, objectives and vision.....	37
8.2.2.	Alignment with other policies.....	38
8.2.3.	Land rights and tenure	38
8.2.4.	Implementation.....	38
8.3.	WASH in urban planning.....	39
8.4.	Climate change in urban planning.....	40
8.5.	Informal settlement in Honiara	41
9.	References.....	42

LIST OF FIGURES

Figure 1: Fifty-eight policy and legislative documents were reviewed across the four capital cities	2
Figure 2: Documents reviewed for Port Moresby.....	6
Figure 3: Role of the Urban Development Plan (NDCD, 2021)	9
Figure 4: Port Moresby's governance structure (NDCD, 2021)	10
Figure 5: Reticulated water (l) and sewerage (r) networks in Port Moresby (NDCD, 2021).....	12
Figure 6: Informal settlement growth in Port Moresby (NDCD, 2021)	13
Figure 7: Converting settlements to suburbs process (NDCD, 2021).....	14
Figure 8: The VanuaGIS publicly available viewing platform.....	15
Figure 9: Documents reviewed for Suva, Fiji	16
Figure 10: Hierarchy of planning policy in Fiji. From: TLTB Regional Land Release Plan for the Greater Suva Area.....	21
Figure 11: Piped water coverage in the Greater Suva Region (TLTB, 2018).....	22
Figure 12: Piped sewerage covered in the Greater Suva Region (TLTB, 2018).....	23
Figure 13: Documents reviewed for Port Vila, Vanuatu.....	26
Figure 14: Documents reviewed for Honiara, Solomon Islands.....	34
Figure 15: Honiara “preferred development scenario” (MLHS, 2018)	38

LIST OF TABLES

Table 1: Document descriptions for Port Moresby.....	7
Table 2: Pairwise analysis of policy and legislation documentation	9
Table 3: Document descriptions for Suva	17
Table 4: Pairwise analysis of policy and legislation documentation	20
Table 5: Document descriptions for Port Vila.....	27
Table 6: Pairwise analysis of policy and legislation documentation	29
Table 7: Document descriptions for Honiara.....	35
Table 8: Pairwise analysis of policy and legislation documentation	37

1. ACRONYMS AND ABBREVIATIONS

CSO	Civil society organisations
DFAT	Department of Foreign Affairs and Trade
HCC	Honiara City Council
IWC	International WaterCentre
JMP	Joint Monitoring Programme for Water Supply and Sanitation
MHMS	Ministry of Health and Medical Services
NCD	National Capital District
NCDC	National Capital District Commission
NGO	Non-governmental organisation
PNG	Papua New Guinea
PVMC	Port Vila Municipal Council
SCC	Suva City Council
SIG	Solomon Islands Government
UDP	Urban Development Plan
WASH	Water, sanitation and hygiene
WHO	World Health Organisation
WRM	Water resource management

2. INTRODUCTION

2.1. Background

It is increasingly being recognised that urban planning and public health, in particular water, sanitation and hygiene (WASH) have been traditionally siloed, but that integration of these two fields is important to pursue to achieve sustainable and lasting outcomes (Chigbu & Onyebueke, 2021; Corburn et al., 2020). While the former tends to focus on the spatial and built environment, public health traditionally focused on medical causes of disease and disability (Northridge & Freeman, 2011). The provision of safe, equitable and sustainable WASH services, however, crosses across all those elements – it has a role to play in preventing disease and disability, but the planning and delivery of services inevitably requires consideration of infrastructure and spatial planning, particularly to ensure inclusive access. It also requires integration in planning of other aspects of the urban environment – for example, faecal sludge management services cannot be delivered without serviceable roads, and water reticulation infrastructure requires easements.

This need for integration of public health and urban planning is particularly true of informal or unplanned settlements in urban environments. Amongst other examples, the Covid-19 pandemic has highlighted the stark public health inequalities present in cities with informal settlements, where space constraints and inadequate access to basic needs such as water and sanitation access can make adhering to protective public health measures difficult to achieve (Corburn et al., 2020).

Urban populations are growing across Melanesia, with migration into cities increasing as people pursue economic opportunities. High population growth, combined with rural to urban migration, has seen high urban growth rates in most countries, even though in percentage terms the proportion of urban population is low, with the exception of Fiji which was 57% in 2021 (World Bank, 2021a). Although data are limited The World Bank estimates urban growth rates for PNG, Solomon Islands and Vanuatu are between 2.7 and 4.3% annually (World Bank, 2021b).

Past research, including by International WaterCentre (IWC), indicates that access to WASH services in urban and peri-urban informal settlements across Melanesia is broadly inadequate (Souter & Orams, 2019). In addition, there is little evidence to suggest that WASH services that do exist for urban and peri-urban informal settlements are future-proof – they are not planned with resilience to shocks and change in mind, such as climate change or the needs of changing populations in water catchments.

2.2. Why focus on WASH and climate change in urban planning?

As noted above, urban land use and infrastructure is essential to implementing effective WASH, and is also important for responding to climate change. Planning can provide a way to choose and improve land uses by bringing together knowledge and values. Hence, planning provides one useful tool for integrating WASH and climate change resilience. However, it is widely reported that urban development planning lacks resources and capacity across Melanesia (Keen & Connell, 2019; Rooney, 2021). It is suggested that is in part due to a limited focus on urban issues in the Pacific, including from aid and development agencies (Jones, 2007; Keen & Connell, 2019). This document analysis for urban development planning in Port Moresby, Honiara, Port Vila and Suva identifies a range of city-scale urban development plans and strategies. This suggests that capacity has been increasing and that the importance of urban challenges is being confronted by governments, with the support of development agencies. Policies and strategies to guide or influence urban development exist at national, regional and local (city) scales and are increasingly integrated. However, there remains gaps.

2.3. Purpose and structure of document

This document summarises a policy and legislation review conducted as part of the Water for Women funded research project conducted by the International WaterCentre (IWC), University of the South

Pacific (USP) and their partners. The overarching research question for this work is *How can urban planning processes in Melanesia be strengthened through participation and integration to improve the resilience of WASH service delivery in informal settlements and areas identified for housing growth within the urban footprint?*

The sub-question this document intends to contribute towards is to: Understand what existing planning processes (knowledge, information systems/platforms, plans and policies) are in place for future and existing areas of growth and informal settlements.

Following a broad overview of urban planning in Melanesia, this document is structured by city (Port Moresby, Suva, Port Vila and Honiara). The policy and legislative review attempted to collect the central documents for each of the following themes – urban planning, WASH, and climate change, as well as any overarching strategy or policy for development in the country of relevance. Fifty-eight (58) documents were reviewed across the four cities (Figure 1). In the following sections, those documents are briefly described, and then specific review of the main urban planning document for the city is reviewed using separate lenses of WASH; climate change; and informal settlements.

Each of the documents was designated as (1) strategy, policy or implementation plan, (2) town planning scheme or urban development plan or (3) legislation or regulation; and further classified in terms of the dominant theme, as (1) cross-cutting (e.g., national sustainable development plans, (2) water, sanitation and hygiene (WASH) and water resource management (WRM), (3) urban development or planning (4) climate change. A comparison of terminology using a pairwise word search in each of the four thematic groupings was conducted to assess the integration of these themes within across documents.

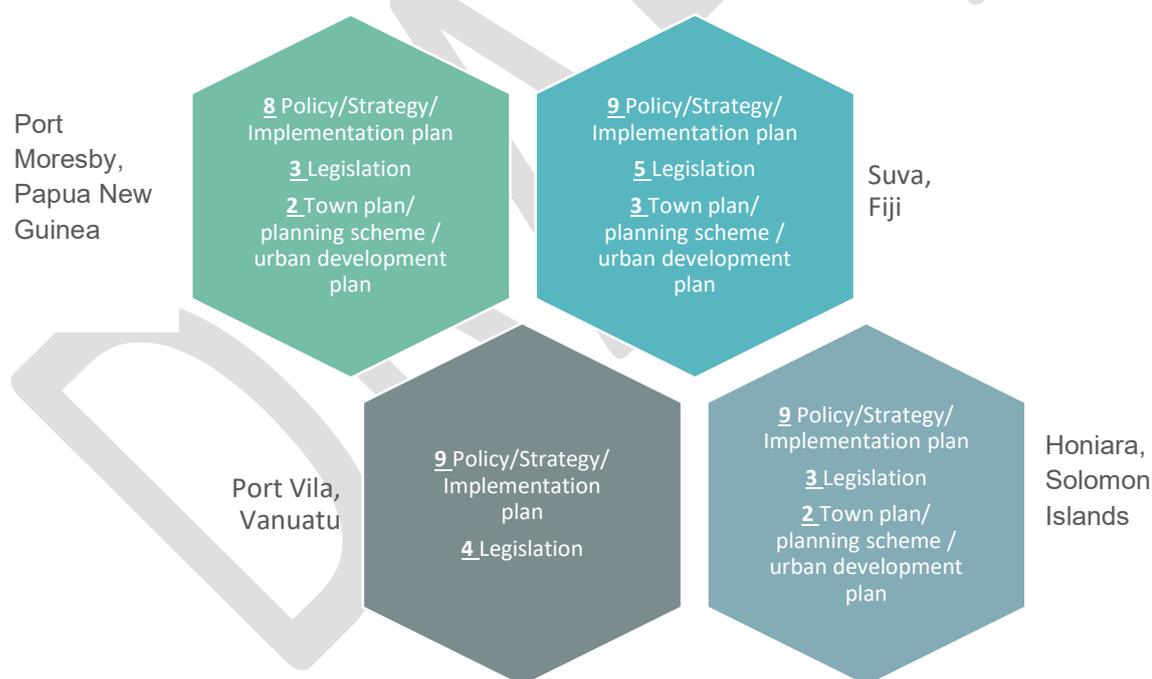


Figure 1: Fifty-eight policy and legislative documents were reviewed across the four capital cities

2.4. A note on terms

This document adopts the terminology of “informal settlements” in accordance with UN-Habitat definitions. In Melanesia, different terms are used interchangeably but also at times with different emphases, and these include “squatter settlements”, “unplanned settlements” and “peri-urban settlements”. Use of particular terms in this report does not reflect a particular political or social opinion regarding legitimacy, structure or ways forward, but rather are used in an effort to promote the greatest understanding.

2.5. Limitations

This policy review was conducted using a desktop analysis of policies, strategies, implementation plans, infrastructure plans, town planning schemes, urban development plans, legislation and regulation that was available for each city and relevant to the three key themes. The review may not have considered all such documents if they are not publicly accessible or in electronic format. More detailed assessment, including through stakeholder engagement and interviews, is required to confirm and consider such documentation and critically investigate their approaches. The document analysis provides limited insights into the implementation of these plans, and stakeholder interviews currently ongoing may reveal more about the trends in implementation.

3. INTEGRATION, GAPS AND STRENGTHS

Based on the review of policy and legislative documents across the four cities, some common elements, and specific differences, were found.

- Honiara and Suva are the only Melanesian capital cities with current town planning schemes, though the Suva scheme is not available online. The Port Vila zoning plan has not been gazetted and Port Moresby, while featuring arguably the most comprehensive and up-to-date urban development plan at a strategic level, is yet to formalise a planning scheme. This means that zoning, leasing and development applications and approvals are currently handled at the local, city level in Honiara and Suva, but at the national level for Port Moresby and Port Vila.
- Port Moresby and Honiara have developed strategic city plans (Towards 2030 Town Plan and Greater Honiara Urban Development Strategy and Action Plan, respectively). Suva is covered by a regional strategic plan, but this only applies to iTaukei Land and hence does not apply to Suva city.
- WASH provision in urban areas is often conducted by a commercial or state-owned commercial enterprise, and thus the responsible Ministries or Departments within national and municipal governments consider their responsibilities in this space limited. Many national WASH policies reviewed explicitly state they are focused on WASH service provision in rural (and in some cases, peri-urban) areas. In doing so, commercial levers for such enterprises can restrict their expansion of services into perceived non-commercial informal settlements areas, in addition to issues of land tenure and rights, creating a vacuum of service provision.
- Climate change impacts are widely recognised across the policy and planning documents, with sea level rise and increased intensity of extreme events usually the key risks highlighted. Adaptation to climate change is becoming more integrated into planning, but in most places the focus is on protecting infrastructure and settlements. As it develops, there are opportunities to use planning to build resilience across multiple sectors. There also appears to be a lack of accessibility to local scale climate hazard data for some cities; for example, while flood inundation mapping was evidenced for Port Moresby in its Town Plan and Honiara City Council maintains a flood overlay in its planning scheme, the data available was more limited for Suva and Port Vila.
- Spatial analysis using digital methods is more common in more recently prepared policy documents, across the range of different sectors of urban planning, WASH and climate change. Access to tools and capabilities in some Melanesian cities (such as Port Moresby and Suva) is clearly increasing, while this is not so apparent in Honiara and Port Vila.
- None of the documents reviewed explicitly consider climate-resilient or climate-adaptive WASH provision in urban areas except for the National Adaptation Plan for Fiji, which requires all new WASH infrastructure to be assessed for climate resilience. There is already some evidence of climate-proofing considerations for new WASH projects (such as the Rewa river off-take project

in Fiji), however the approach or framework for such considerations is not apparent. There is a broad lack of guidelines on climate-resilient water and sanitation service options.

- Based on the documents reviewed, it is apparent that all four cities recognise informal settlement in urban areas, and state clear objectives to better serve such areas where basic services (such as water and sanitation) are lacking. Some (including Port Vila) commonly nominate informal settlement on the peri-urban boundary of the town to be of most concern. This raises further issues of ambiguous responsibilities for the provision of WASH in settlements because different local governments and national departments may have intersecting and overlapping responsibilities. The Port Moresby strategic urban development plan is the only example of a detailed program to improve services to settlements.
- There remain some significant gaps with respect to integrating citywide, climate-resilient WASH provision into urban planning processes in Port Moresby, Suva, Port Vila and Honiara.

4. URBAN PLANNING IN MELANESIA

The urban challenges faced vary across the capital cities of Melanesia of Port Moresby, Suva, Port Vila and Honiara, but there are many common features. A colonial legacy and rapid urban population growth, combined with limited resources have led to infrastructure development not keeping up, unplanned growth leading to disconnected cities, and informal settlements (Connell, 2011; Jones, 2012; Jones & Suhartini, 2014; Keen & Connell, 2019). This has led to urban areas being described as collections of urban villages, rather than an integrated city (Jones, 2016). Increasingly, these cities are developing Western-style planning systems, making use of tools such as zoning, development assessment and strategic plans to address these challenges.

Importantly, land tenure introduces a point of difference from much urban development elsewhere, with Melanesian countries recognising customary land tenure to a greater extent than many regions globally (Simo, 2010). This adds complexity for conventional planning and has led to a plural land tenure system, especially in cities, where some customary land tenure has been transferred into government land tenure to support urban development (Jones & Suhartini, 2014; Keen & Connell, 2019). The growth of informal or unplanned settlements adds a further layer of complexity (Jones, 2012).

Although the document analysis that follows suggests that capacity for, and focus on, urban development planning is increasing, the implementation of planning has been raised as a key challenge (Keen & Connell, 2019). Political and governance barriers, combined with a lack of capacity and resources, are highlighted in the literature (e.g., Connell, 2011; Jones, 2012; Jones & Suhartini, 2014; Keen & Connell, 2019).

It is clear from the documents that Melanesian cities are increasingly recognising the importance of urban development planning and are developing strategies and plans for their capital cities. These recognise the multiple issues facing these urban areas, including providing services, and largely have visions and strategies for more sustainable and more equitable urban growth, including improving security and wellbeing, although still with a strong focus on economic development

5. PORT MORESBY – PAPUA NEW GUINEA

5.1. Institutional framework for WASH, climate change and urban planning



5.1.1. Responsible institutions

The following institutions were recognised within the policy and legislative review as having a role and responsibilities with respect to urban WASH, climate change or urban planning (or a combination):

- Department of Lands and Physical Planning – controls development under the “Hiri Vanapa Sogeri” or HIVASO Physical Planning Area which extends beyond Port Moresby around the Sogeri plateau. Zoning, leasing and development applications and approvals are currently managed at this national level Port Moresby.
- National Capital District Commission – the province level of government over Port Moresby, though functionality equivalent of a city council. In particular, the Physical Planning Board who is responsible for city planning.
- Department of National Planning and Monitoring – responsible for monitoring the progress of various government policies and implementation plans, including the National Strategy for Responsible Sustainable Development and the WASH Policy (which was drafted by the WASH Taskforce under this department). This department will also chair the NWSHA board.
- Department of Inter-Government Relations – responsible for matters of local government, including performance, strategic planning and policy dissemination.
- National Department of Health – sets national water and sanitation standards, public health awareness (including WASH), and provincial environmental health officers.
- Department of Environment and Conservation – responsible for water resource management, environmental licencing, and setting water quality standards for water bodies and bulk water abstraction.
- Eda Ranu/WaterPNG – responsible for water and sanitation service provision in the National Capital District. Eda Ranu and WaterPNG officially merged in 2020 (Water PNG, 2020).
- National Housing Corporation – responsible for the provision and management of public housing.
- Motu Koitabu Assembly – represents the interests of traditional villages and associated customary lands.

It is noted that the WASH policy places substantial responsibilities for WASH sector policy and strategy development, technical regulation and monitoring functions on the not-yet-existing National Water, Sanitation and Hygiene Commission (NWSHA).

5.1.2. Policy and legislation for urban planning, WASH and climate change

Thirteen policy and legislative documents were reviewed pertaining to Port Moresby and the broader urban environment in PNG (Figure 2). These ranged from national sustainable development plans to a town plan for Port Moresby. The documents are briefly described in Table 1.

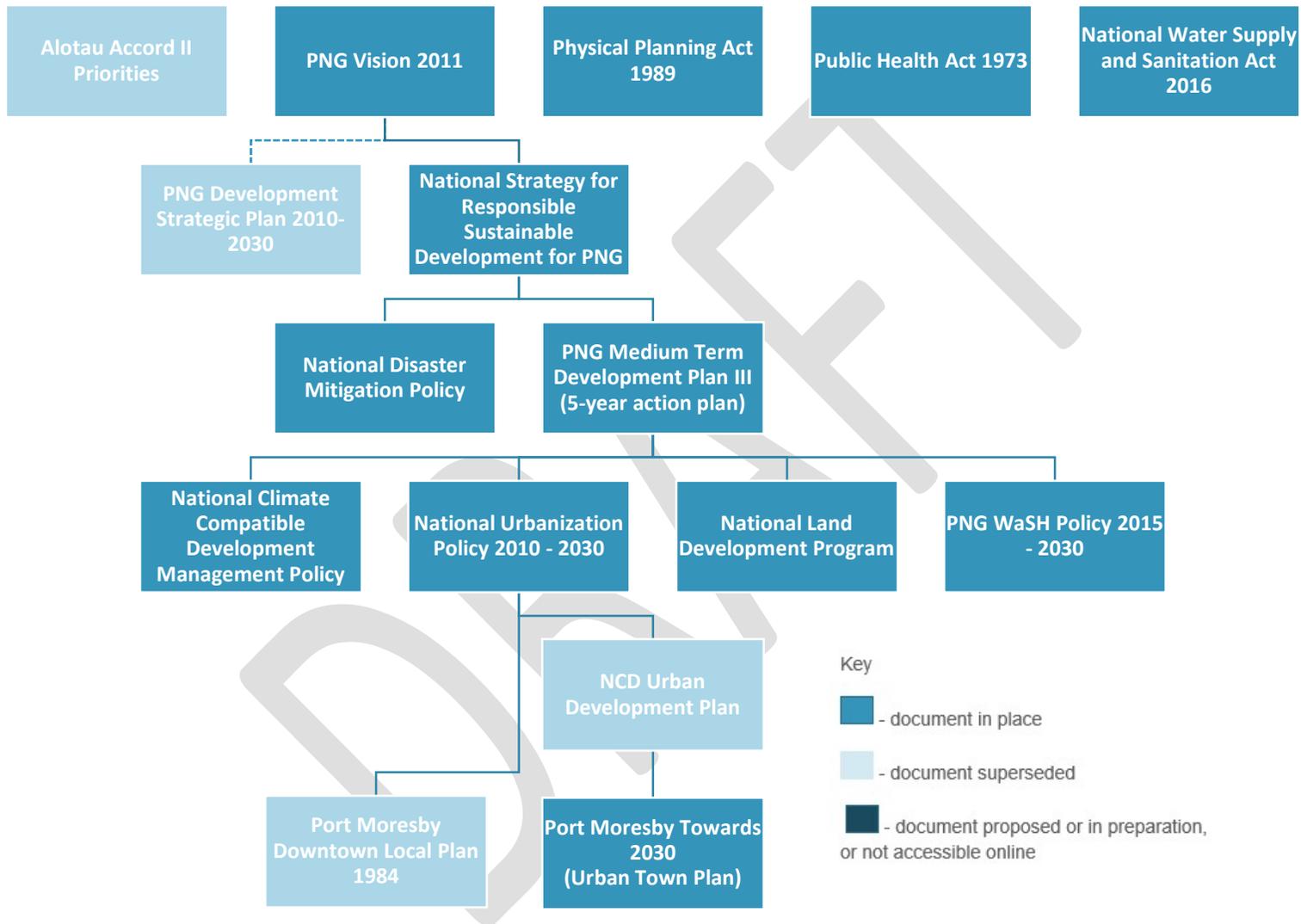


Figure 2: Documents reviewed for Port Moresby

Table 1: Document descriptions for Port Moresby

Name	Description
Vision 2050 (National Development Policy)	Vision 2050 is the overarching strategic vision document for human development in Papua New Guinea. It is arranged by high level statements, a mission, seven Key Pillars of development, eight Critical Enablers and a set of indicators and trackers. Under Vision 2050, Urban WASH is considered under Pillar 3, "Institutional Development and Service Delivery", in particular 1.17.7.3 "Infrastructure and Utilities". Climate change and urban development both fall under Pillar 5, "Environmental Sustainability and Climate Change". The document was developed in 2009 under then Prime Minister Michael Somare and remains referenced in current documents. The overarching vision is "We will be a smart, wise, fair and happy society by 2050".
Cross-cutting	
Strategy for Responsible Sustainable Development	This Strategic Plan replaces the Development Strategic Plan 2010-2030 and was developed in 2014 under Peter O'Neill. The Strategy provides an "Inclusive Green Growth Framework" with three Dimensions - six Enabling Conditions, four Mainstreaming Mechanisms and eight Policy Instruments. The impetus for revising the Strategic Plan is given as a refocus from primarily fossil fuels and raw natural resources to sustainable development. This high-level strategy puts focus on achieving sustainable food and water security, sustainable energy, and mitigating the effects of climate change. In comparison to the previous DSP, StaRS does not contain a distinct set of baselines, goals and targets, but rather sets out a framework for sustainable development based around the three pillars of environment, economic and social. Climate change is discussed. Protecting informal rights is cited as an inclusive enabling condition of the Strategy.
Cross-cutting	
Medium Term Development Plan-III Vol1	The MTDP was developed in alignment with Vision 2050 and the DSP, and further operationalises the goals and vision of the overarching documents, including through discussion of ways to implement, finance, monitor and evaluate the implementation. The MTDP is built around eight Key Result Areas (KRAs). WRT urban WASH, KRA 7, "Responsible sustainable development", includes a goal of the sustainable use of water with strategies and targets around water and sanitation access - 2022 target of 100% for urban water access, and 80% for urban sanitation access. A particular strategy under this goal is for "Water PNG Limited to provide safe water and improved sanitation services for all urban households and business houses". KRA 5 "Improved service delivery" discusses service delivery at a district level, and does not explicitly mention WASH. KRA 7 also explicitly addresses climate change and managing disasters. Urban development is not explicitly discussed in this MTDP. No mention of informal settlements.
Cross-cutting	
Medium Term Development Plan-III Vol 2	As per the above document, with greater detail provided for each strategy and funding mechanism. For urban WASH, the strategy calls for the establishment of a National Water, Sanitation and Hygiene Authority, and for the development of a WASH Policy. It has annual targets for the 5 years of the plan.
Cross-cutting	
National Disaster Mitigation Policy	This policy was released in 2004. The stated aim of this policy is to provide a mechanism for disaster mitigation, vulnerability reduction, emergency response and reconstruction. It is intended to allow coordination of efforts. Its inclusion into this list is based on the focus on planning strategies, including land use controls, building codes and standards, and enforcement to mitigate the impacts of hazards. The policy establishes the concept of "A Step Ahead" as a proactive approach to planning and implementation of mitigation in disaster management. Climate change is not mentioned in the document.
Climate change	
Physical Planning Act 1989 (and associated regulations)	This legislation regulates physical planning at the National/Provincial levels of government and considers land use, planning, regulation of physical developments and the creation of Local Development Plans. It also requires 2 representatives on the Physical Planning Boards (national, provincial and NCD) from either settlements, churches or sporting bodies. Under the legislation the Planning Board can enter into an agreement with either the land developer, the owner or the occupier of the land to provide or improve public or private utilities (including water and sewerage). This may include monetary contributions to the proper authority for the utility service.
Urban planning	
Public Health Act 1973 (and associated regulations)	The Act makes provision for matters of public health in PNG, including regulations for the handling of food, supply of potable water, disposal of "night soil" and pollution of waterways. The Act allows for the appointment of Health Inspectors to enforce compliance with regulations.
WASH & WRM	
Water Supply & Sanitation Amendment Act	This amended legislation establishes Water PNG Limited as a state administered company with a formal set of functions, including to "provide, design, construct and maintain" and water supply and sanitation systems for "cities, towns and rural areas", including securing and providing an

Name	Description
WASH &WRM	adequate supply of water. Water PNG Limited must, under the Act, “manage, operate and maintain” water supply and sanitation systems owned by the company.
National Climate Compatible Development Management Policy	This Policy was released in 2014 under Prime Minister Peter O’Neill. It recognises that the overarching, related development documents such as Vision 2050 and the DSP articulate climate change strategies, and this policy is intended to establish the particular actions for building a climate-resilient and carbon neutral pathway to sustainable economic development. The document includes a "General Public Infrastructure Policy A" which describes water supply and sanitation infrastructures measures to reduce vulnerability and mitigate impacts of CC on WASH access. There is no mention of informal settlements or informality in this document.
Climate change	
National Urbanisation Policy	This policy was released in 2010 championed by Deputy Prime Minister Puka Temu, Carol Kidu and Andrew Kumbakor (Minister of Housing and Urbanisation). This policy covers several urban areas as well as the capital Port Moresby - Madang, Law and Goroka amongst others. The policy is intended to establish a framework and plan to manage the urbanisation process and challenges associated with unplanned urban growth. The policy places a reasonable focus on informal and squatter settlement and notes that in the National Capital District (NCD), there are about 99 settlements of which 79 are unplanned. It recognises the often-inadequate conditions experienced in informal settlements, including with respect to essential services of water and sanitation, including noting illegal water connections. It also informs that "Under section 81 of the Land Ordinance, 1962, a native may sell, lease or dispose of native land in accordance with native custom. Thus, custom allows the occupation of land by people who are not members of the descent group." Also, worth noting the policy establishes that the current responsibility for subdivision construction and related provision of infrastructure such as water and sanitation falls to the private sector, and this infrastructure is then handed over in responsibility to the town administration for operation and maintenance.
Urban planning	
WaSH Policy 2015-2030	This policy was released in 2015 and was required under the MTDP and the DSP. It covers urban and rural WASH access and governance. Interestingly, in terms of defining urban areas, the policy includes both the legally gazetted town boundary and the broader peri-urban environment that is socially and economically dependent on the gazetted areas. The policy continues the proposal first set out in the MTDP of the establishment of a National Water, Sanitation and Hygiene Authority that would have authority over both rural and urban areas and be tasked with inclusion and service delivery. A key responsibility would be "Ensuring all new interventions in urban areas include clearly identified strategies for providing services to poor and urban settlement areas". This proposal also calls for the proposed NWSHA to maintain a WASH Management Information System to be used by NWSHA and other agencies for coordinating WASH service delivery. Notwithstanding that NWSHA has not yet been established, the bulk of the roles and responsibilities for WASH are attributed to the NWSHA under the policy and it is unclear to which department these fall in the absence of the NWSHA.
WASH &WRM	
National Capital District Urban Development Plan revised	This superseded NCD UDP, released in 2006, was the first legal physical planning framework for the NCD. Prior to this, zoning exists under the National Capital District Urban Development and Services Study but this did not have statutory recognition. The UDP acknowledges and incorporates the 1984 Port Moresby Town Centre Local Plan, and the areas that this covers are guide for those areas covered . This plan identifies the seven urban traditional villages (Tatana, Vabukori, Hanuabada, Pari, Baruni, Korobosea and Kilakila represented by the Motu Koitabu Council, and also recognises these traditional villages have limited basic services. The UDP includes a section on Infrastructure Services, of which Water Supply features first, naming Eda Ranu as the responsible authority for the NCD for water supply and sewage disposal, and notes there are (were) no sewerage systems serving settlements and urban villages. The most recent estimates contained in this plan, from 2005, list 21 formal settlements, 32 squatter settlements, and 36 Motu Koitabu settlements. The plan assumes that a settlements strategy will be developed to manage settlements growth. The UDP includes a series of context and proposed zoning maps that include transformation of some existing informal settlement areas to "High Density (Self-Help) Residential Areas where upgrading of housing and services occur and the areas are drawn into the formal system, as well as areas of "transitional housing" (not defined elsewhere). The maps identify 14 local planning areas within the NCD and 11 Urban Centres.
Urban planning	
Port Moresby Towards 2030 Town Plan	This document supersedes the 2006 UDP and sets out a vision for the capital of a "Liveable City, a Productive City, and a Sustainable City". It includes a master plan built around 30 urban centres (nodes in the utilities networks), green space, economic and freight corridors, and transport routes. This Plan is a substantially spatial plan, and references alignment to the Vision 2050, StaRS, the MTDP, and the National Urbanisation Policy. This Town Plan notes the lack of reliable and current census data, however from a spatial perspective suggests settlements are the dominant land use at 15% of the NCD (urban villages 2%).
Urban planning	

In Table 2, a pairwise analysis of the thirteen documents is shown to assess the integration across the three themes. The analysis suggests neither urban planning nor climate change are well considered in WASH/WRM policy and legislation, while urban planning policy and legislation considers all three themes reasonably substantially.

Table 2: Pairwise analysis of policy and legislation documentation

		Document type ¹			
		Cross-cutting (e.g., SDP)	WASH and WRM	Urban planning	Climate change
Theme	WASH and WRM ²	232	654	325	67
	Urban planning ³	0	0	383	13
	Climate change ⁴	154	2	106	526

1 – for document types, see Table 1

2 - “water” “water supply” “sanitation” “hygiene” “WASH” “catchment” “wastewater” “drainage” “septic” “sludge management” “sewage” “sewerage”

3 - “urban planning” “town planning” planning scheme” “zoning” “urban development”

4 - “climate change/s” “climate resilience” “climate adaptation” “adaptation” “resilience” “mitigation” “flood” “storm surge” “sea level rise” “drought” “extreme weather” “disaster”

5.2. Formal planning in Port Moresby

Urban development planning in Port Moresby is led by the National Capital District Commission (NCD). Its most recent urban development plan “Port Moresby Towards 2030 Town Plan”, released in November 2020. The national Department of Lands and Physical Planning recently introduced the concept of the “Hiri Vanapa Sogeri” or HIVASO Physical Planning Area which extends beyond Port Moresby and the National Capital District boundary, around the Sogeri plateau into Central Province. This boundary is reflected in the Towards 2030 Town Plan, however, there remains some confusion between the NDCD and the Central Provincial Government about how this effects land use and planning responsibilities (EMTV Online, 2021).

5.2.1. Role, objectives and vision

The role of the Towards 2030 Town Plan is envisaged as a central coordinating vision and strategy to guide service strategies, local development plans and infrastructure development (Figure 3)

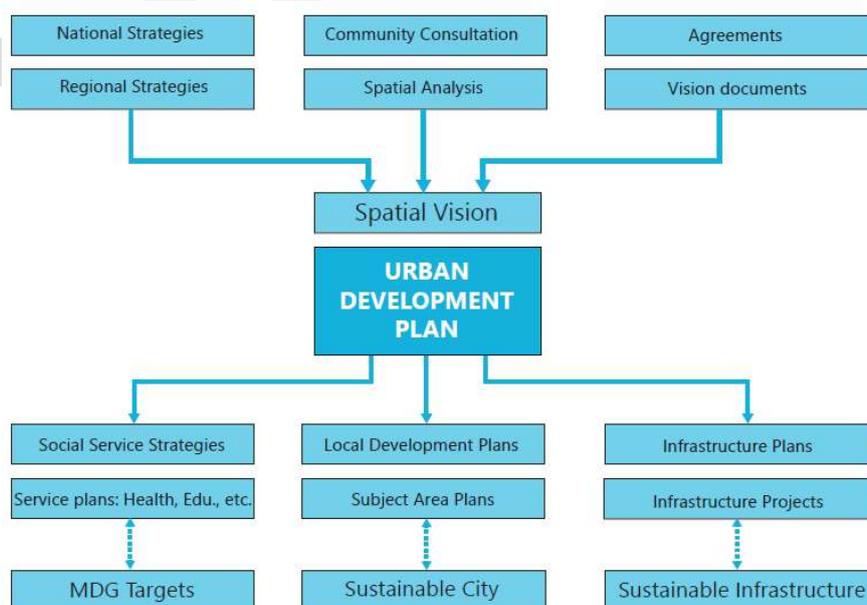


Figure 3: Role of the Urban Development Plan (NCD, 2021)

The Plan identifies a vision and several key priorities to make Port Moresby a ‘liveable’, ‘productive’ and ‘sustainable’ city. The focus for the Port Moresby Plan is to turn ‘urban village’ settlements into suburbs as part of a connected and strategically planned city. It identifies four development regions, and 30 urban centres to act as nodes in the utilities networks and provide services, jobs and community focus. It then identifies corridors to connect these, and the transport routes needed. Importantly, it also identifies areas for greenspace, including recreation corridors and marine and environmental protected areas.

5.2.2. Alignment with other policies

Towards 2030 Plan aligns with the Constitution, the NCD Strategic Plan (Vision 2017-2022), the Medium Development Plan III 2018-2022 and the National Urbanisation Policy 2010-2030. The plan also describes the governance arrangements creating and for implementing the plan (Figure 4).

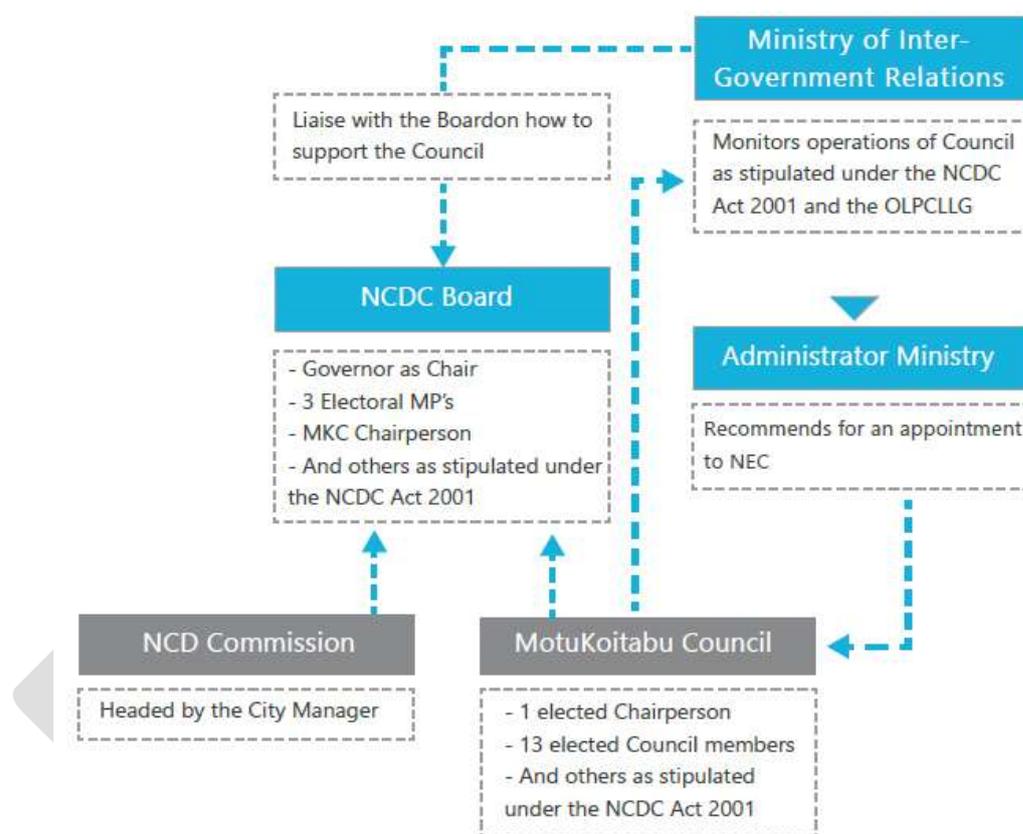


Figure 4: Port Moresby's governance structure (NDCD, 2021)

5.2.3. Land rights and tenure

The Towards 2030 plan identifies two principal categories of land tenure across the NCD: State and customary land, but also recognises that informal settlements are common across the city. Indeed, according to the plan, informal land arrangements are increasingly being seen as less cumbersome and more affordable than the formal mechanisms for land transfer and tenure.

5.2.4. Implementation

The plan is a reasonably comprehensive strategy that calls for development of a city masterplan and related masterplans for the development regions. It provides a detailed description of the current state of the city, including climate change impacts, while noting limitations to information. It provides a clear vision for the city and a high-level strategy for achieving it.

The plan also identifies several actions for implementation, which includes engaging customary owners and communities. There is limited information on how actions will be funded, however. The Plan identifies a number of limitations including a lack of information (and especially an up-to-date census and a lack of a comprehensive planning study prior to the strategy), challenges for compliance and enforcement, and uncertainties over future growth. The plan calls for an immediate action to prevent further unstructured settlement growth and to stop unapproved development, as well as enforcement of existing lease arrangements and an orderly list of land release priorities. It is unclear how effective this call for action has been.

Currently, zoning, leasing arrangements and development application and approvals are handled at a national level by the Department of Lands & Physical Planning (<https://dlpp.gov.pg/>).

5.3. WASH in urban planning

The following elements of urban WASH service provision can be found within the Port Moresby Towards 2030 Town Plan. Broadly, the Towards 2030 Plan strongly integrates WASH service provision planning considerations into the urban planning process. It is noted that the WaSH Policy for PNG (2015-2030) includes discussion of urban WASH issues and purports to address WASH issues in underserved urban areas where Eda Ranu/Water PNG are not active. However, in terms of actions and objectives, the policy remains focused on providing services to rural and peri-urban populations.

> Describes physical constraints for the provision of WASH services, including mapping

- Towards 2030 includes mapping of physical and environmental constraints for the city.
- Slopes – In Port Moresby, areas above 90m elevation have been restricted for urban development. The historical basis for this was due to water pressure constraints above that elevation, though it has been maintained for environmental protection, recreation and city identity reasons.
- Flood prone land – Towards 2030 recognises there is no comprehensive flood study for Port Moresby, although the city regularly experiences flooding and inundation
- Water quality – issues recognised include sediment runoff along the ridgelines, litter and liquid contaminants, and use of waterways for sewage disposal.

> Recognises physical and natural assets with respect to WASH

- Waigani Wetlands are recognised in Towards 2030 as *“a vital element in the city’s water system...and an important habitat for waterbirds and aquatic flora and fauna.”*. The city’s sewerage treatment ponds are located here and operational by gravity, however the ponds are full of sludge, and the new treatment plant at Joyce Bay does not have approval to remove sludge, so it is accumulating there.
- The physical WASH assets for the city include Sirinumu Dam, 20km east of the city; Mount Erima water treatment plan, treating 177ML per day of water; water reticulation system that covers the older parts of the city (Figure 5); the new wastewater treatment plan at Joyce Bay, operating at 25% of its capacity; sewerage treatment ponds at Waigani Wetlands; a sewerage reticulation system split into two catchments , one to the Wetlands, and one to the new WTP (Figure 5).
- Freshwater areas include the Laloki river floodplain, Boroko Creek, Gerehu Swamp, and the Waigani Wetlands.

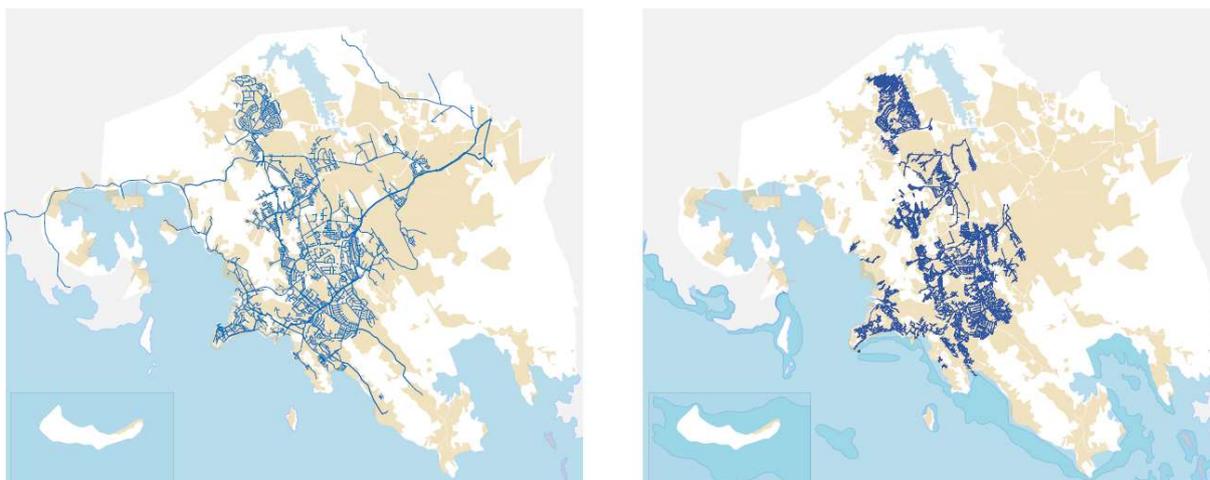


Figure 5: Reticulated water (l) and sewerage (r) networks in Port Moresby (NDCD, 2021)

- > Includes some objectives, actions or initiatives with respect to urban WASH provision and planning
 - Under “Productive Cities” – there is a direction to extend and upgrade the water and sewerage network, including actions to integrate the Eda Ranu/Water PNG 5 and 10-year master plans, adopting a planned nodes network for utilities, and “pilot projects for affordable and sustainable utilities delivery”. An example of the latter already being piloted is a one tap per four households metering model.
- > Recognises roles and responsibilities with respect to urban WASH services
 - Towards 2030 includes limited recognition of the roles and responsibilities of urban WASH service provision. Eda Ranu/Water PNG are only mentioned once, and there are no role descriptions
 - However, it is noted that the WaSH Policy for PNG (see Table xx) assigns many responsibilities for the provision of WASH in rural and urban areas to a yet-to-be-formed National Water, Sanitation and Hygiene Authority, and thus the lack of clarity of roles may be exacerbated.
- > Includes spatial planning, zoning, and/or mapping of the physical city including WASH considerations
 - Towards 2030 includes substantial mapping and spatial planning, including mapping and projections of a proposed water and sewerage network plan.

5.4. Climate change in urban planning

PNG does not have an overarching climate change adaptation strategy or plan. They have started the process of developing a National Adaptation Plan. However, the impacts of climate change are well-recognised, and both the PNG Vision and the Strategy for Responsible Sustainable Development cover climate change under the pillar ‘Environmental Sustainability and Climate Change’.

Climate change impacts are widely recognised within urban planning documents. The Port Moresby Towards 2030 Town Plan includes a section on the impacts of climate change (pg. 49) which cites the Climate Change Vulnerability Assessment for Port Moresby. It identifies sea level rise causing inundation and coastal erosion as the key risks to development in Port Moresby, but also notes that increases in the intensity and frequency of rainfall and increases in average daily temperature are likely.

Adaptation to climate change is central to the ‘Sustainable City’ theme (p. 104). Conserving and enhancing blue and green infrastructure is highlighted as a way to adapt to climate change. Furthermore, enhancing liveability is also linked to building community resilience to facilitate adaptation to climate change. The plan identifies several practical adaptive actions that can be part of urban development to address the impacts of climate change:

- Maintenance of stormwater drains and preventing blockages due to solid waste dumping
- Raising community awareness of the role of wetlands, mangroves and other ecosystems as barriers to storm surges
- Protecting wetlands and mangroves in public ownership, replanting and regenerating mangroves in degraded sites
- Strengthening tree preservation orders and increasing tree canopy cover
- Terracing and revegetation on hill slopes to reduce erosion
- Public reserves and drainage reserves kept free of development and rezoning.

The impacts of climate change are recognised within urban development planning for Port Moresby. However, climate adaptation is not a central theme in urban planning. It is treated as one issue among many, largely defined by its impacts on infrastructure. The response is also largely focused on infrastructure. Its potential impacts across sectors, including water and sanitation provision has not been well-detailed. There is a recognition that improving liveability can build resilience, which could be built on to broaden considerations of climate change impacts and resilience strengthening

5.5. Informal settlement in Port Moresby

The Towards 2030 Town Plan estimates half the population of Port Moresby live in settlements and this is growing over time (Figure 6).

Prior to the current Towards 2030 Town Plan, the NCDCC recognised three categories of settlement, namely, formal, squatter and Motu Koita settlements (P. Jones, 2012; P. R. Jones & Suhartini, 2014). The Motu Koita settlements are the original indigenous villages of Port Moresby occupied by the traditional landowners, the Motu Koita. These have expanded and grown over time by both natural population increase as well as by the influx of new migrants and development in these villages has largely been undertaken through customary law. Formal settlements are in the minority, and referred to areas of low cost self-help housing developed on State land, with infrastructure often put in place after the initial development. Squatter settlements were defined as “a spontaneous community or cluster

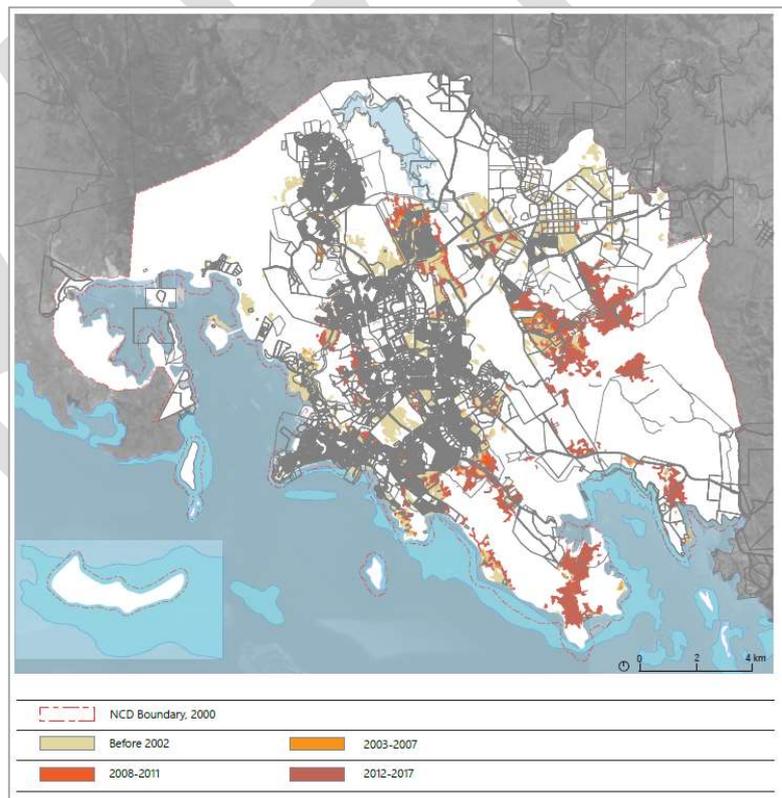


Figure 6: Informal settlement growth in Port Moresby (NCDCC, 2021)

of families who initially invade or progressively settle in and make use of property, or a site, or area of land without consent of the rightful owners” (NCDCC, 2006 p. vi).

> Does the plan recognise informal, unplanned or squatter settlement within the city?

Yes – Towards 2030 includes a section on “Settlements”, differentiating between the terms “Planned Settlements” (those that were upgraded during a 1970s government program), “Squatter Settlements” (unauthorised settlements on government land), and “Settlements on Customary Land” (near or around

traditional villages, or otherwise on customary land). Rates of growth in informal settlements is mapped in the plan and shown in Figure 6.

> Does the plan recognise a lack of water and sanitation services to informal settlements?

Yes – informal settlements are noted to be characterised by a lack of basic services including water and sanitation.

> Does the plan include some objectives, actions, or initiatives for upgrading WASH in settlements?

Yes – Settlements to Suburbs initiative includes connection of utility services including metered water and sewerage – this will apply to nine settlements in Port Moresby, including the two largest, 9 Mile and 8 Mile.

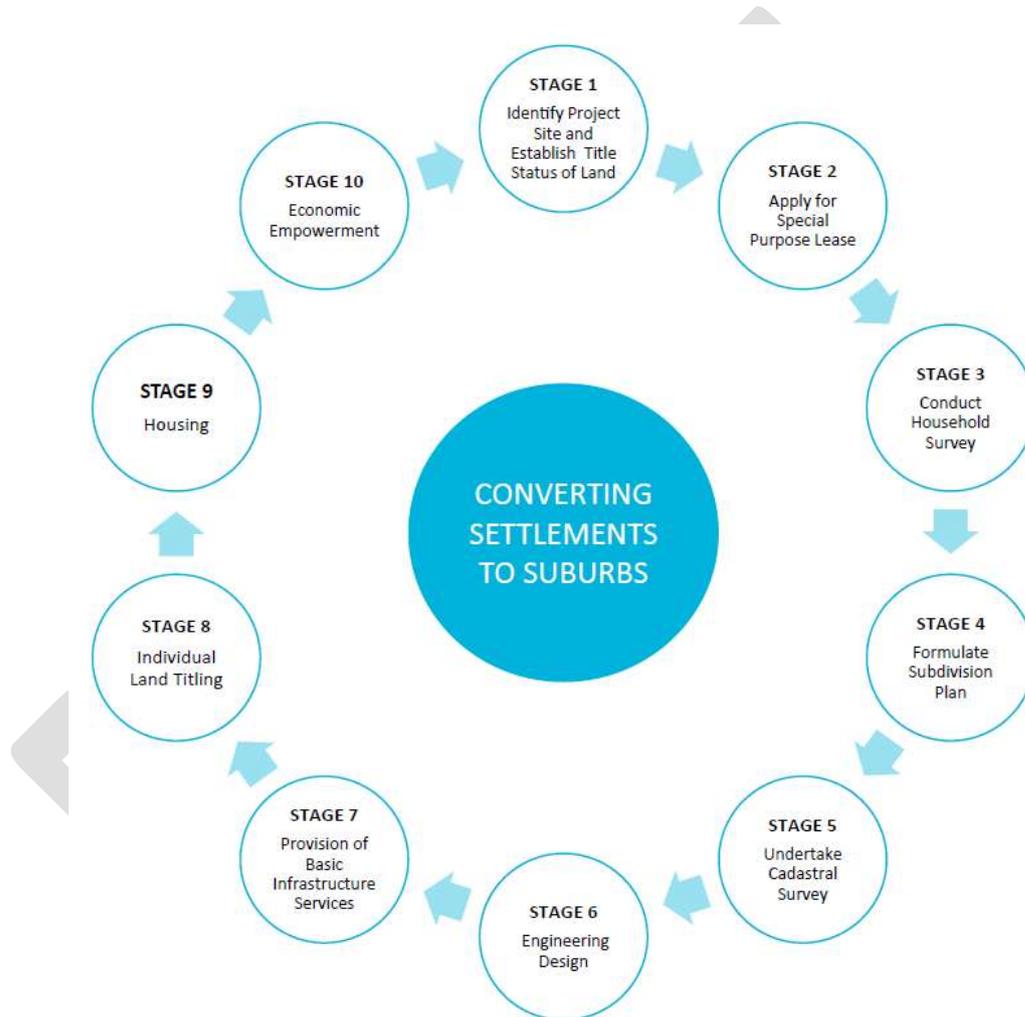


Figure 7: Converting settlements to suburbs process (NDCD, 2021)

6. SUVA – FIJI

6.1. Institutional framework for WASH, climate change and urban planning

6.1.1. Responsible institutions

The following institutions were recognised within the policy and legislative review as having a role and responsibilities with respect to urban WASH, climate change or urban planning (or a combination):

- Ministry of Infrastructure and Meteorological Services
 - o Department of Water and Sewerage – responsible for the policy and regulations of WASH in particular with respect to infrastructure provision.
- Ministry of Waterways and Environment (MoWE) – water resource management for
- Water Authority of Fiji (WAF) – provides and manages water and sanitation services in both rural and urban contexts.
- Ministry of Health and Medical Services (MHMS) – responsible for setting health-related standards including for water and sanitation.
- Ministry of iTaukei Affairs – oversight to all affairs concerning iTaukei land, peoples or culture.
- Ministry of Local Government
 - o Department of Town and Council Planning (DTCP) – responsible for the administration, regulation and planning of all land in Fiji. DTCP embed planning resources into local government level departments, including into Suva City Council.
- Ministry of Lands and Mineral Resources – responsible for administration, development and management of state lands including groundwater resources. The MoLMR also has significant geospatial and survey divisions and maintains an online spatial platform, VanuaGIS, which has a publicly available platform that includes land tenure and boundary information, counters and some environmental data (Figure 8), as well as more comprehensive datasets available to government departments.
- Suva City Council – responsible for strategic planning for the urban area, as well as zoning, leasing and development applications and approvals
- Ministry of Economy – Climate Change and International Cooperation Division – prepared and maintains the climate change policies and National Adaptation Plan for climate change.

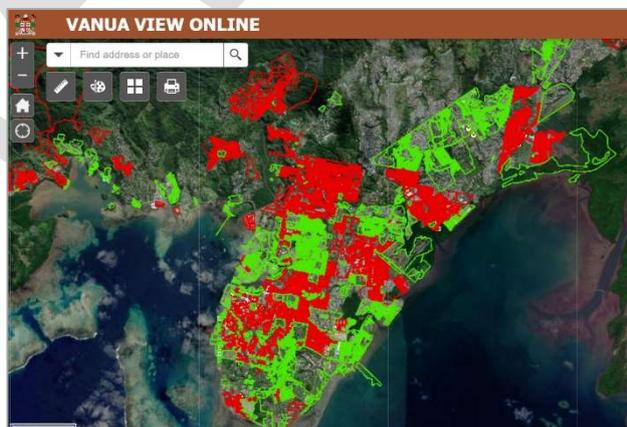
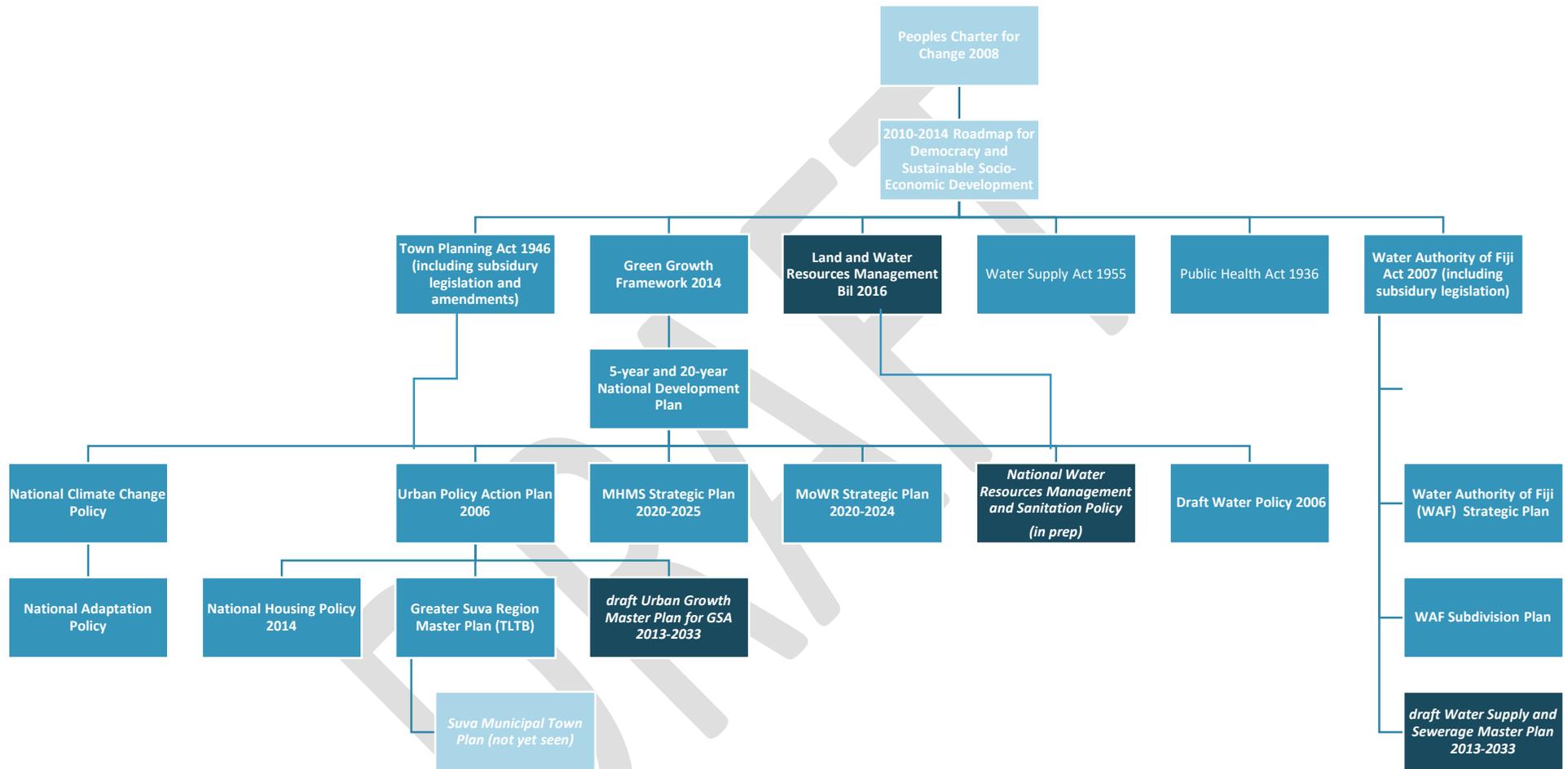


Figure 8: The VanuaGIS publicly available viewing platform

6.1.2. Policy and legislation for urban planning, WASH and climate change

Seventeen policy and legislative documents were reviewed pertaining to Suva and the broader urban environment in Fiji (Figure 9). These ranged from national sustainable development plans to a regional land use planning policy, and WAF subdivision standards. The documents are described in Table 3.



Key – - document in place - document superseded - document proposed or in preparation, or not accessible online

Figure 9: Documents reviewed for Suva, Fiji

Table 3: Document descriptions for Suva

Name	Description
A Green Growth Framework for Fiji Cross-cutting	<p>The Green Growth Framework, released in 2014, is considered the overarching development policy framework under the current Fiji administration. In alignment with other sustainable growth frameworks, the GGF is arranged around an Economic Pillar, an Environmental Pillar, and a Social Pillar, and has a high-level vision of "Restoring the balance in development that is sustainable for our future". There are ten thematic areas that fall under the three pillars; of relevance to this work is the Thematic Area 6 Freshwater Resources and Sanitation Management, Thematic Area 4 Inclusive Social Development and Thematic Area 1 Building Resilience to Climate Change and Disasters. Under each thematic area, short- term, medium term and long-term actions and indicators are provided to meet the challenges identified in the theme.</p> <p>The policy includes strong recognition of water as a vital resource in Fiji, and clear focus on accessible and adequate water and sanitation for all Fijians which is enshrined as a right into the 2013 Constitution. It also recognises different threats to water security, including inadequate sanitation, unregulated extraction of resources and unconstrained development. The document discusses urbanisation, including the challenges of low housing stock, rural-urban migration, competing demand for land and the expansion of informal settlements. It also centres climate change as a key threat and opportunity to both rural and urban populations and environments. A medium term (3-5 year) action under Thematic Area 1 reads "Develop climate and disaster resilience plans for urban and rural (prioritising squatter settlements and other vulnerable communities) by 2019."</p>
Water Authority Act of Fiji 2007 WASH & WRM	<p>The Water Authority Act of Fiji dictates the functions of the state-controlled enterprise of WAF, which include harvesting, storing, treating and reticulating the water supply to customers, collecting, transporting, treating and discharging wastewater, and assisting in managing and conserving water resources. Customers are defined under the Act as either owners or occupiers of land.</p>
Water Supply Act 1955 WASH & WRM	<p>This legislation vests the power to declare and manage catchments with the Minister, as well as establishing the right of the Commissioner (appointed by the Minister) to restrict, diminish, withhold or suspend the supply of water if the water supply is insufficient, there is damage to infrastructure or pollution, or there is a fire or breakdown in the waterworks. 'Owners' to which fees can be charged and held responsible refer to either the owner of the land or the lessee of the land.</p>
Public Health Act 1936 WASH & WRM	<p>This Act in particular requires that houses shall be provided with a proper and sufficient supply of safe water for the domestic use and drinking. Water storage facilities shall be maintained at all times in a clean condition and protected from contamination to the satisfaction of the medical officer of health or sanitary inspector. It also requires local authorities to conduct regular inspections of sanitary conditions.</p>
Town Planning Act 1946 (amended 1997) Urban planning	<p>The Town Planning Act grants permission for local authorities to produce planning schemes to apply to any land within the bounds of administration, and to enforce them. It sets out the required contents of a town planning scheme, which includes both protection of natural areas such as inland waters and riverbanks, as well as locations for utility infrastructure including water and sewerage.</p>
Bill-No-7 Land and Water Resources Management WASH & WRM	<p>This bill has not yet been passed into legislation. It establishes a Land and Water Resources Management Board with the functions of supervising, planning for and implementing the sustainable use of land and water resources. It would apply to all land except those in town and city areas, which would remain under the provision of the Water Authority of Fiji Act.</p>
National Development Plan 5 Year & 20 Year Transforming Fiji 2017 Cross-cutting	<p>This implementation was published by the Ministry of Economy in 2017 and contains many references to the policy framework of Fiji development established under the Green Growth Framework, including the Urban Policy Action Plan. According to the plan, extensive consultation with private sector, civil society, community groups, government and the general public was undertaken to complete this plan. The Plan reiterates the goals and objectives from the Green Growth Framework with respect to WASH for urban and rural populations, and sets out more specific strategies to address water security and access to sanitation, for example new infrastructure commitments like dams and sewerage treatment plants in urban areas, leak reduction programs, and the continuation of the free water initiative for households with an income of less than \$30,000 per year consuming less than 91,250L.</p>

Name	Description
National Climate Change Policy 2018-2030	<p>The plan specifically calls out support from the ADB, Green Climate Fund and European Investment Bank for financing WASH infrastructure projects to service the urban areas of Suva and Nausori. It also notes WAF is exploring new dam sites to service the Nadi-to-Lautoka corridor. With respect to urban development and planning, the implementation plan calls on reviewing city and town planning schemes to "create vibrant urban centres"; cities that will have improved disaster response; and extending town boundaries where necessary. The plan also calls for spatial plans and long-term miniature models to guide future development of all urban centres. Climate change is raised as a cross cutting issue and one that attracts specific strategies. Informal settlements are raised in the plan, and are thus addressed: "Informal settlements will continue to be upgraded and leases granted to those on state land. Leases will also be granted to informal settlements on iTaukei land with the consent of landowners".</p>
Climate change	<p>Like the National Development Plan, the National Climate Change Policy was developed and released by the Ministry of Economy, in 2018. It promotes a "woven" approach to resilient development, with a vision that speaks to inter-generational equity based on a "socially inclusive, equitable, environmentally sustainable, net-zero emissions economy". The NCCP is set out in three "clusters" - "foundations" (national risk governance and global climate action), "dimensions" (climate change adaptation, climate change mitigation) and "pathways" (capacity development, sustainable financing, and private sector transition & engagement). When setting out the risks and impacts of climate change, the NCCP notes water and sanitation issues as an existing risk factor, and the plan includes objectives to manage and protect freshwater resources to prioritise "agile" adaptive investments to increase access to WASH services. The NCCP also calls for strategies that are specifically targeted at urban populations, and uses Building Codes as one of the key strategies for achieving resilient development objectives. The policy does not refer to any other policies except for the National Development Plan and the Green Growth Framework (i.e. Water Policy, National Adaptation Plan, Urban Action Plan or any town planning schemes). The NCCP recognises the need for relocation guidelines for coastal informal communities that may be at risk of sea level rise.</p>
National Adaptation Plan - a pathway towards climate resilience	<p>This National Adaptation Plan from 2018 was prepared in concert with the National Climate Change Policy, and it sets out 160 adaptation measures to be implemented across a five year planning horizon to meet the NCCP objectives. The plan references the suite of Fiji strategic development planning documentation and appears well integrated. There are two specific adaptation areas of interest under this plan for this work - a focus on "Human Settlements", and "Infrastructure". Under the former, informal settlements are recognised as important areas of adaptation focus, given their tendency towards inadequate housing, services and exposure to environmental and climate hazards. A number of key strategies are relevant - the plan calls for the development of a "national-level systematic strategy which can identify and prioritise communities for relocation based upon vulnerability maps, guide subsequent relocation efforts, identify and fulfil capacity building needs of communities once relocated, as well as incentivise and fund relocation of communities." (#14.10). It also calls for the preparation of "Guided Urban Growth Management Plans" that use hazard maps, zoning and buffer zoning to guide resilient development (#14.11). Under the Infrastructure section, Adaptation Measure #15.A.2 requires a comprehensive assessment of the climate-resilience of all WASH infrastructure, as well as #15.A.3 which requires upgrades and new developments in WASH to be climate resilient. The NAP also makes it quite clear: "All adaptation projects seeking national and development and climate finance must align to the priorities outlined in the National Adaptation Plan."</p>
Climate change	
Urban Policy Action Plan 2006	<p>The UPAP was released in 2004 and was guided by the Asian Development Bank to follow the Strategic Development Plan (SDP - precursor of the NDP). The high-level objectives of the UPAP are: economic growth, poverty reduction, and spatial equity, and the plan explicitly states its desire to be a good enabling environment to the private sector in terms of urban development. The thematic areas under the plan are: urban land market development, housing development, urban infrastructure and services development, urban environmental management, economic development and poverty reduction, urban planning and management framework, urban services financing, institutional framework and governance, legal and regulatory framework, capacity building and human resources development.</p>
Urban planning	
The National Housing Policy 2011	<p>The National Housing Policy (NHP), released in 2011, was prepared under the previous strategic development framework for Fiji, but remains to be replaced as of 2022. It was prepared in light of substantially increasing numbers of informal settlement in urban Fiji,</p>

Name	Description
Urban planning	<p>and refers to urban growth, urban poverty and inadequate land stocks as some of the barriers to sustainable housing.</p> <p>The NHP refers to a regional plan for the Greater Suva area but notes a "failure to avoid the formation of socially stigmatized neighbourhoods. This was an indirect outcome of the application of rigid and inflexible standards, lack of consultations during the planning process at the local level, and the resultant failure to reflect the needs of the urban poor in the plans". Some of the policy measures proposed in response to the increase in informal settlement include providing security of tenure, upgrading settlements, and introducing community action plans including participatory land mapping and community savings arrangements.</p>
MHMS Strategic Plan 2020-2025	<p>The Ministry of Health and Medical Services strategic plan covers the 5 year period from 2020, and establishes the vision, mission and strategic priorities for the ministry. Water, sanitation and hygiene do not feature explicitly in any of the strategic priorities of the MHMS Plan, though a reduction in communicable diseases is an objective (without mention of clean water or adequate sanitation). Settlements are nominated as one of seven key settings in which MHMS will strategically target. The Plan does include a strategic priority to "strengthen population-wide resilience to the climate crisis", in particular for vulnerable populations.</p>
WASH & WRM	
MoWE 2020 2024 Strategic-Plan	<p>The Ministry of Waterways and the Environment Strategic Plan covers the 4 year period from 2020, and establishes the vision, mission and strategic objectives for the ministry. It references the SDGs, the NDP and Green Growth Framework, and thus situates itself within the broader planning and policy framework. It has two key strategic objectives: to build resilience to climate change and waterways related hazards through irrigation, improved drainage, flood control, riverbank and coastal protection; and to be a reliable environment regulator and provide trusted leadership in environmental policy and practice. This document sets out key strategies for watershed and catchment protection including for rivers in and around the urban areas of Greater Suva. The document has a strong climate change focus and recognises the link between provision of WASH services and water resource management. Informal settlement is not mentioned in this document.</p>
WASH & WRM	
Draft Water Policy	<p>This policy was released in 2006 as a "draft for discussion", and it is understood that the policy never progressed from draft status. The policy is focused on water resources management and includes 10 goals and a number of principles that guide Fiji's management of water resources. It nominates water conservation, allocation, quality protection and the commercialisation of water services as principles. There is no mention of climate change, urban development or squatter/informal settlements in this document. It is unclear where this draft water policy sits within the broader water policy framework.</p>
WASH & WRM	
WAF Strategic Plan 2020-2025	<p>In this document WAF sets out its strategic direction for the 5-year period from 2020. It is guided by the NDP and the SGDs, and focuses on the commitment to providing optimised water and sanitation services across urban Fiji. WAF was established in 2010 and as of 2020 lists 152,261 customers (residential and non-residential) in its network. WAF's three strategic drivers are Water and Wastewater (assets), Accountability (culture) and Finance (efficient and effective service delivery). The plan also describes a major infrastructure project to address increasing water demand in the Greater Suva area - the Rewa River Water Supply Scheme. The plan discusses climate change but not informal settlement.</p>
WASH & WRM	
WAF Subdivision Plan	<p>WAF have published a relatively recent subdivision standard (2021), which includes minimum levels of service for water and sanitation that WAF can commit to. This document that includes a minimum water pressure at the inlet to the customer meter, and minimum flow to meet average day demand, though this is tempered by WAF's right to reduce this if required.</p>
WASH & WRM	
TLTB Greater Suva Land Strategy	<p>This document is a 30-year strategic plan prepared by the iTaukei Land Trust Board (TLTB) for land release for development in Greater Suva. The Strategy is aligned to the broader planning and development framework for Fiji including the NDP and the Green Growth Framework. The key objective of the plan is to identify suitable areas for development and growth with the Greater Suva area, and it does this on a spatial basis by overlaying a number of different spatial environmental and planning datasets. It has a large section on informal settlements, and the provision of water and sewerage infrastructure into those areas. In alignment with other policies, this strategy nominates tenure security where appropriate, discouragement of new settlement on iTaukei land, and upgrading of existing ones where possible.</p>
Urban planning	

In Table 4, a pairwise analysis of the seventeen documents is shown to assess the integration across the three themes. The analysis suggests that urban planning is rarely mentioned in WASH /WRM and climate change policy and legislation in Fiji, while WASH/WRM and climate change as theme are mentioned across all document types.

Table 4: Pairwise analysis of policy and legislation documentation

		Document type ¹			
		Cross-cutting (e.g., SDP)	WASH and WRM	Urban planning	Climate change
Theme	WASH and WRM ²	397	1382	247	102
	Urban planning ³	17	1	384	4
	Climate change ⁴	201	86	106	1433

1 – for document types, see Table 3

2 - “water” “water supply” “sanitation” “hygiene” “WASH” “catchment” “wastewater” “drainage” “septic” “sludge management” “sewage” “sewerage”

3 - “urban planning” “town planning” planning scheme” “zoning” “urban development”

4 - “climate change/s” “climate resilience” “climate adaptation” “adaptation” “resilience” “mitigation” “flood” “storm surge” “sea level rise” “drought” “extreme weather” “disaster”

6.2. Formal planning in Suva

Urban growth regulation and town planning in Suva is governed by a town planning scheme. Suva is one of four cities within the Greater Suva Urban Area (GSUA) that each have their own council and town plan, along with Nausori, Lami and Nasinu. A Suva Town Plan was drafted in 1979, and has not been updated since then.

6.2.1. Role, objectives and vision

The document analysis did not identify objectives or a vision for urban development at the city scale, with no Suva strategic plan currently available. The analysis suggests there has been a concentration of effort on land disputes and applications approvals with the main activity of planning and development systems being development assessment of land use, buildings and subdivision by both local and national governments.

A regional plan, the TLTB Regional Land Release Plan covers iTaukei Land within the Greater Suva Area (GSR) boundary, excluding freehold and state land, as well as areas within the municipal boundary. This identifies a number of key issues to be addressed by land use planning in the region, including climate change, informal settlements and adequate provision of utilities.

Alignment with other policies

The TLTB Regional Land Release Plan for the Greater Suva Area presents a hierarchy of Fiji planning policy (Figure 10). This suggests that any town planning scheme should align with Fiji's Green Growth Framework, the National Climate Change Policy, the National Housing Policy and the National Land Use Planning Policy. The TLTB Regional Land Release Plan for the Greater Suva Area aligns with these policies. Any town planning scheme should also align with its related regional TLTB master plans, in the case of Suva the TLTB Regional Land Release Plan). It is not clear from the document analysis if the current Suva town planning scheme and associated development assessment and zoning mechanisms are aligned to all of these, and there is no evidence of any formal document outlining the relationship between the policies and the planning scheme. It is likely, however, that in implementing the scheme these policies are referred to and used by the planners.

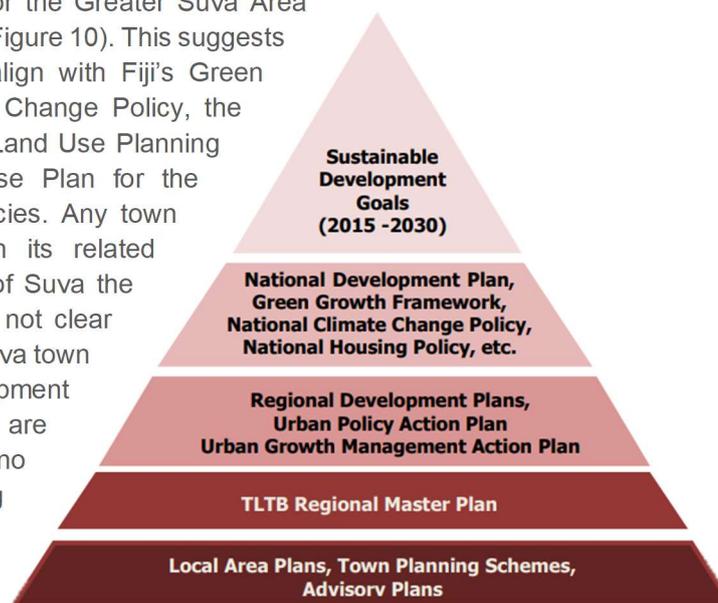


Figure 10: Hierarchy of planning policy in Fiji. From: TLTB Regional Land Release Plan for the Greater Suva Area

6.2.2. Land rights and tenure

There are three types of land in Fiji: State land, iTaukei (customary ownership land) and privately held land. Land ownership can be transferred using the Torrens System and that there can be no challenge to the validity of a registered proprietor's title to land in the absence of actual fraud. There are two ways that land is leased and used in Suva – through the iTaukei Lands Trust Board (TLTB) or through the Land Bank, which was set up under the National Housing Policy.

There are independent indigenous landowning units within the GSUA that are iTaukei villages, although most of central Suva is Freehold and State Land.

Some powers that are available under the Town Planning Scheme may affect individual private property rights such as pooling property belonging to several owners and redivision of that land amongst owners, adjusting boundaries, and creating parks and conservation areas (Sloan, 2019).

6.2.3. Implementation

Implementation is largely through zoning, development assessment of land use, buildings and subdivision. Legal instruments and regulation are in place to determine how parcels of land are created (subdivided), how land may be developed and the enforcement against unlawful development (planning and environmental law), the standards that must be followed when buildings are built on land (the building code is under the Public Health Act) and various land taxes and other regulations.

All three town councils in the GUSA are strongly supported by the Department of Town and Country Planning (Ministry of Local Government) in implementing these laws and regulations. However, Suva is now self-funding, with no support required financially from central government. Each municipal council has a CEO who is in charge, but also a Special Administrator from the central government. Zoning, leasing and development applications and approvals are handled by the Suva City Council (<http://suvacity.org/town-planning/>)

6.3. WASH in urban planning

While a Town Plan for Suva exists, it was prepared in 1979 and is not readily available for review. Revision of this plan is in process. The regional plan, the TLTB Greater Suva Regional Land Release

Plan or Land Use Plan (GSR LUP), was assessed for WASH implications in the absence of other available urban planning documents. Broadly, the GSR LUP incorporates several WASH service provision planning considerations within the urban planning context. It is noted that the draft Water Policy does not address urban WASH provision, and the Department of Water and Sewerage's Sanitation and Hygiene Policy (2021) addresses rural areas only. WAF does not have a Sanitation and Hygiene Policy at present, and though its strategic plan focuses on urban water provision, there is no mention of informal or unplanned settlements.

> Describes physical constraints for the provision of WASH services, including mapping

- Cyclones are noted as causing pollution of Greater Suva's water supplies.
- Geological and soil mapping is included, showing much of the urban part of Suva is underlain by Waidina Sandstone and overlain by hill country soils, which are described as well-drained. This has implications for onsite sanitation options.
- The main areas subject to flooding identified within the plan are in the delta areas in Rewa and Navua. The Plan states that these areas have restrictions for major developments.

> Recognises physical and natural assets with respect to WASH

- Water infrastructure noted under the GSR LUP includes the reticulated water system, covering 85% of the Greater Suva area; the Waila and Tamavua water treatment plants both fed by two run-of-river schemes on the Waimanu river with a combined capacity of 150ML per day. The plan states an additional 45ML per day will be required by 2033.
- Sanitation infrastructure noted under the GSR LUP include the reticulated wastewater system, covering approximately 36% of the Greater Suva area; six wastewater treatment plants including the Kinyoa WWTP which serves approximately 98% of the sewered area (the remainder are mostly decentralised or site-based plants); 80 sewer pump stations; septic tanks for the remainder of the population.
- Feasibility studies have been conducted for additional water supplies from four different rivers in the Greater Suva catchment, one of which a run-of-river off-take (Rewa river), the other three dams (Sovi, Waimanu and Navua rivers).

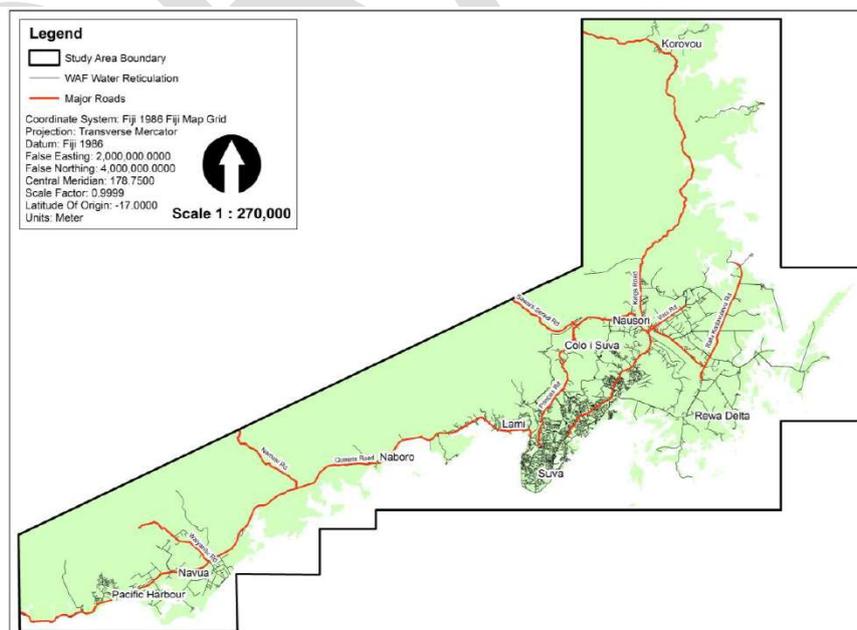


Figure 11: Piped water coverage in the Greater Suva Region (TLTB, 2018)

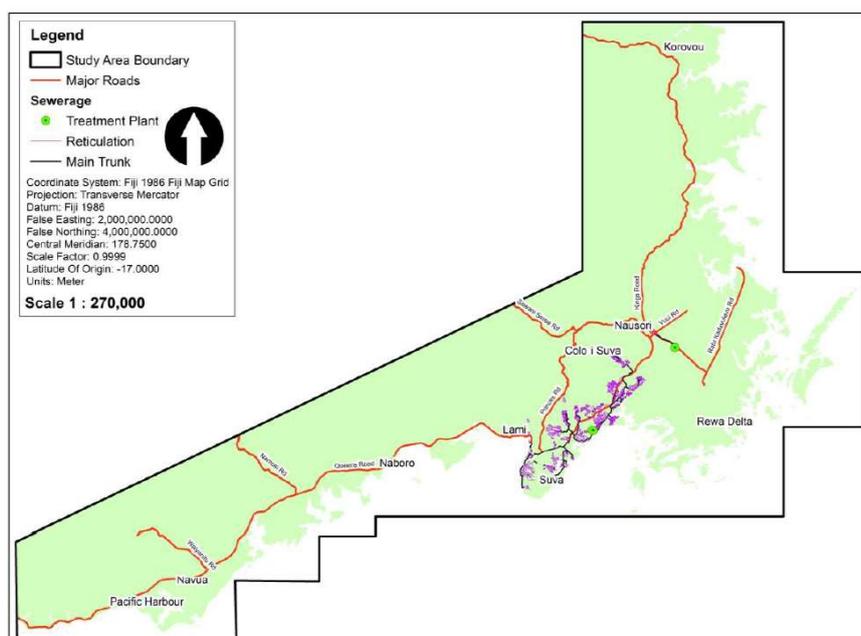


Figure 12: Piped sewerage covered in the Greater Suva Region (TLTB, 2018)

- > Includes some objectives, actions or initiatives with respect to urban WASH provision and planning
 - In the GSR LUP includes discussion of strategic planning implications which provides for a new water source and water treatment plant. The plan states it will support the WAF Master Plan to expand and upgrade water and wastewater treatment facilities.
 - The plan establishes an objective to prioritize WASH services in urbanised and peri-urban areas before expanding to rural areas.
 - An action identified is to protect water resources from encroachment and contamination, including by:
 - o Establishing buffer areas on development sites that border bodies of water, and leaving vegetation buffer zones
 - o Mandating that topography, water and natural systems must be considered when issuing development leases.
- > Recognises roles and responsibilities with respect to urban WASH services
 - The GSR LUP includes a table of referral agencies for different issues around development proposals. This table includes WAF with respect to ensure water demands can be met.
 - An appendix of the plan includes records of stakeholder engagement during the development of the GSR LUP. This list includes representatives from DLCP, Rewa Provincial Council, Ministry of Health, Ministry of iTaukei Affairs, and Ministry of Infrastructure and Transport. Notably absent are WAF, Suva Town Council, and Ministry of Waterways and the Environment.
- > Includes spatial planning, zoning, and/or mapping of the physical city including WASH considerations
 - The plan includes substantial spatial planning and mapping, indicating comprehensive spatial datasets available for government use. The piped water and sewerage network is mapped, as is land use. However, there is no mapped spatial projected planning or zoning maps included in the GSR LUP.

6.4. Climate change in urban planning

Fiji has a National Climate Change Policy and a National Adaptation Plan, which both provide key background and guidance on the impact of climate change on urban development. The National

Adaptation Plan, released in 2018, contains 160 adaptation measures identified as the most urgent by stakeholders to be prioritised over the five-year period of the plan. The plan identifies the multiple impacts of climate change, barriers to adaptation and the proposed priority actions, which cover a wide range of sectors and also includes actions for integration, raising awareness and mobilising funds.

The National Adaptation Plan highlights the significant risks to human settlements generally and highlights that Suva and the surrounding region are a significant concern, given the large proportion of the population living there (p. 25). It highlights risks from seaborne and riverine natural hazards, cyclones, storm surges, coastal and riverine erosion, landslides, floods and already occurring sea level rise due to climate change. The TLTB Regional Land Release Plan for the Greater Suva Area also highlights these risks from climate change, although many actions in the Climate recommendations (pg. 79) aim to mitigate climate emissions, with adaptation actions focused on improving information, knowledge and awareness. Note that there is some evidence that climate change is being considered across multiple sectors within strategic planning, with the site of potential future dams on the Rewa river considering impacts of climate change and sea level rise (pg. 52).

It is unclear from the document analysis how climate change is considered within urban planning in Suva itself, given the lack of a strategic urban plan. Given Fiji's climate change policy and well-known global leadership on climate change it is likely that the risks of climate change are being considered but may not have been formalised within the planning processes.

6.5. Informal settlement in Suva

The TLTB Regional Land Release Plan states that nearly 15% of Fiji's urban population is estimated to live in informal settlements, with the highest number in in the Greater Suva area.

The National Housing Policy sets out three ways to respond to informal settlements: 'regularisation' of land tenure (formalisation), rural resettlement, and formalised mediation between landowners, and land users. It has been noted that Fiji was one of the first countries to address informal settlement in an inclusive manner – through the recognition of the rights of informal settlers, through formalisation processes, human rights declarations, and the freedom from arbitrary evictions enjoyed by Fijian residents (Phillips & Keen, 2016).

> Does the plan recognise informal, unplanned or squatter settlement within the city?

Yes – the TLTB Plan notes that estimates suggest that 80% of iTaukei reserve lands (land set aside for the maintenance, sustenance and support of the communal land-owning units) are occupied by informal settlements, often with the approval of landowners but without the involvement of the TLTB. At the same time, informal settlements on state lands take advantage of the fact that eviction is unlikely, while formalization of land tenure, and/or development of housing sites and services are currently proceeding on a piecemeal basis. Informal settlements on freehold land require costly legal processes to remove them and political pressure is often brought to bear on landowners to let informal settlers remain.

The TLTB Plan frames informal settlers as "squatters" that are illegal, generally live in unhealthy environments and contribute to crime and other social problems.

> Does the plan recognise a lack of water and sanitation services to informal settlements?

The plan recognises a lack of basic urban infrastructure but does not directly cover water or sanitation issues.

> Does the plan include some objectives, actions, or initiatives for upgrading WASH in settlements?

Key policies under the TLTB Plan focus on discouraging and controlling the formation of informal settlement on iTaukei land. In addition, regularisation (formalisation) of tenure of some sites is sought under the Plan.

7. PORT VILA – VANUATU

7.1. Institutional framework for WASH, climate change and urban planning

7.1.1. Responsible institutions

The following institutions were recognised within the policy and legislative review as having a role and responsibilities with respect to urban WASH, climate change or urban planning (or a combination):

- Ministry of Lands and Natural Resources (MoL&NR) – responsible for physical planning and resource management
 - o Department of Water Resources (DoWR) – responsible for water supply for urban areas, and the management of water resources
 - o Department of Urban Affairs and Planning (DUAP) – responsible for urban planning and strategy
- Ministry of Health (MoH) – responsible for sanitation and hygiene policy, promotion and enforcement
- Ministry of Climate Change Adaptation, Meteorology & Geohazard, Environment, Energy and Disaster Management
 - o Department of Climate Change –
 - o Department of Environmental Protection and Conservation
- Ministry of Public Utilities and Infrastructure, Public Works Department (PWD) –
- UNELCO – private utility company that holds the concession for water provision in urban Port Vila
- Port Vila Municipal Council –

7.1.2. Policy and legislation for urban planning, WASH and climate change

Thirteen policy and legislative documents were reviewed pertaining to Port Vila and the broader urban environment in Vanuatu (Figure 13). These ranged from national sustainable development plans to a national land use planning policy for Vanuatu. The documents are briefly described in Table 5.



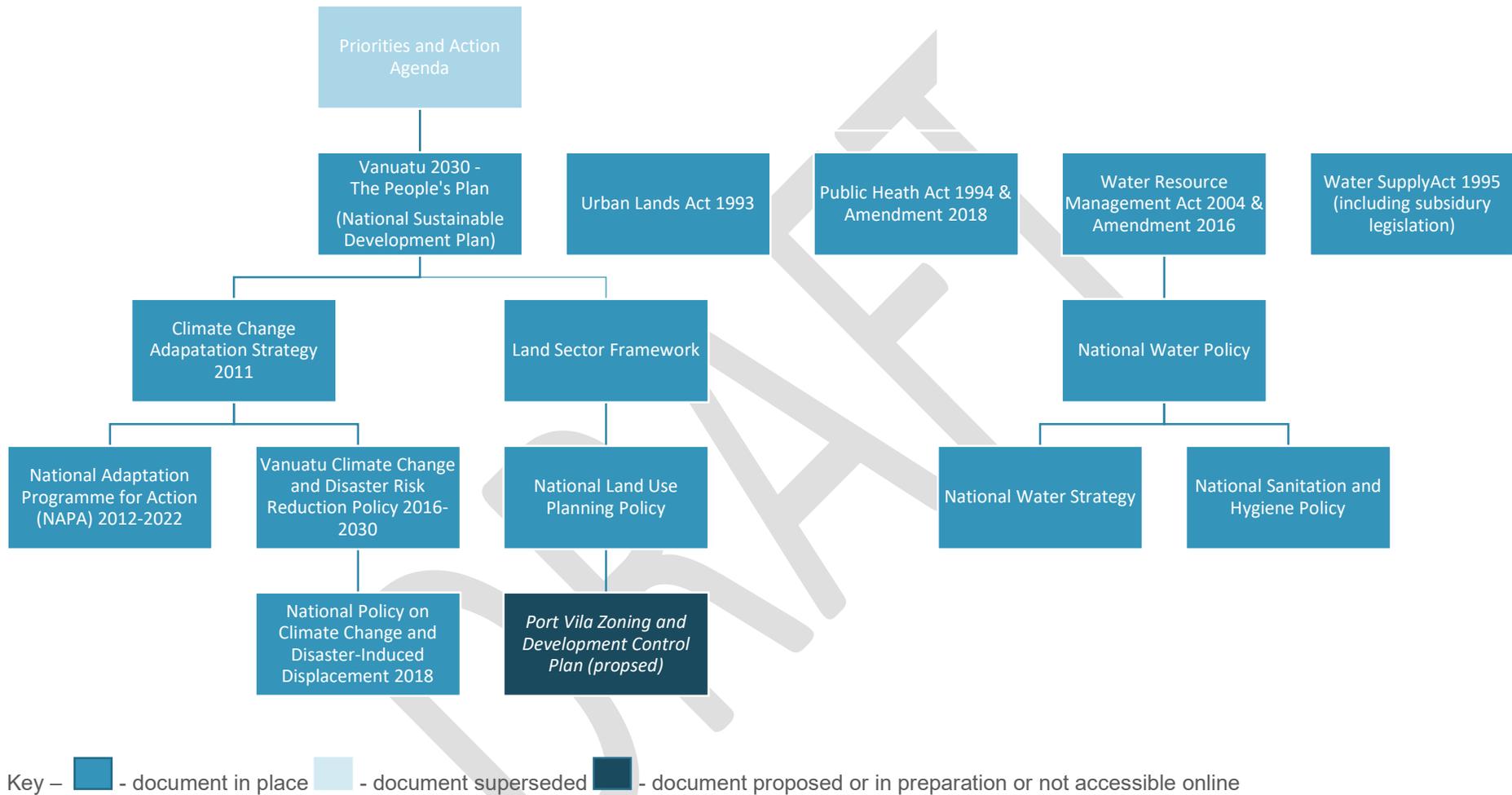


Figure 13: Documents reviewed for Port Vila, Vanuatu

Table 5: Document descriptions for Port Vila

Name	Description
<p>National Sustainable Development Plan (2016-2030) (The People's Plan)</p> <p>Cross-cutting</p>	<p>This SDP represents the overall vision and priorities for development in Vanuatu over a 30-year planning horizon and is intended to guide all proceeding policy and strategy for development. The SDP follows a typical triple-bottom-line framework, with three pillars (environment, society, economy), and several goals (15) and policy objectives (98) that sit beneath these pillars. In general, these policy objectives often align with the global SDGs (for example education, health, equitable growth, biodiversity protection). Provision of WASH infrastructure is embedded under the Economy pillar, and water resource management falls under the Environment pillar. Climate change is well-explored under several goals and policy objectives of the environment pillar. Urban development is not specifically targeted as a goal, however there is a policy objective that calls for processes for acquiring and using land for economic activity. This SDP is short (20 pages) and high level, leaving the implementation and monitoring to be discussed in the <i>Implementation and Monitoring Framework for the National Sustainable Development Plan</i>.</p>
<p>Implementation and Monitoring Framework for the National Sustainable Development Plan</p> <p>Cross-cutting</p>	<p>The IMF for the SDP is an associated document that includes the processes detailed to achieve the goals and objectives of the SDP. An aim of the Implementation Plan is to allow for interoperability, embedding actions across different areas of government. Each Policy Objective has an associated set of indicators, targets for 2030, baselines, and alignment to SDGs. For the policy objective about climate change, indicators include proportions of government ministries with policies, budgets and legislation about climate change. One indicator of interest to informal settlements is the proportion of rural families engaged in trade with families in urban centres. Under Policy Objective SOC6.6, "Strengthen physical planning and management to meet the service delivery needs of a growing population", indicators include proportion of declared planning areas with a physical plan, and a target of 1 planner in each area by 2030.</p>
<p>Water Resources Management Act and Amendment</p> <p>WASH & WRM</p>	<p>This Act applies to all water in Vanuatu, i.e., inland waters including groundwater and any estuarine or coastal sea water prescribed as water under this Act (sects. 1 and 2) and establishes that all water in Vanuatu to be owned by the State (Minister of Land and Natural Resources) but assigns water access rights for customary use with customary landowners. The Act defines the customary rights of users of water and the rights of occupiers of land to use water on or adjacent to land. The Director of Water Resources (established under the Act) may declare Water Protection Zones for specified purposes of protection and management of water. The Amendment mostly makes changes to provisions of rural water management, including about composition and administration of Rural Water Committees, however it also allows the Director to prescribe buffer zones over any river, stream or lake.</p>
<p>Water Supply Act Official Gazette No 26 of 2019</p> <p>WASH & WRM</p>	<p>This Act governs the supply of water by service providers who obtain a concession to do so. Initially this only applied to Unelco and DoWR as the only service providers, but more recently smaller businesses are obtaining concessions. The Act includes Drinking Water Quality Standards. This Act also establishes the responsibility of urban water supply schemes with the government (or its concessionaire) up to the water meter, and beyond the meter with customers.</p>
<p>Urban Lands Act 1993</p> <p>Urban planning</p>	<p>Urban areas or urban communities can be declared by Order of the Minister. The Act determines that custom land must be registered within a specified period of time (one year after promulgation of urban areas, three years after promulgation in urban communities). This means that no additional claims for custom land can be registered within the urban area of Port Vila, and if the peri-urban area is declared there will be a period of claims allowed. The Act also sets out that leases in urban areas can be freely transferred between individuals or corporations so long as they are registered and approved of by the Ministry.</p>
<p>Public Health Act and Amendment Sanitation 2018</p> <p>WASH & WRM</p>	<p>This Act is the primary means used by the Port Vila Municipal Council to investigate sanitation-related complaints, enforce the provisions, and appoint Environmental Health Officers. It includes specific provisions about water supply, waste disposal and wastewater discharge. It is this Act that requires local government councils to provide proper and sufficient supplies of "wholesome" water for domestic purposes.</p>
<p>Climate Change and DRR Policy 2016-2030</p>	<p>Threats to ongoing water resource security and sustainable access are considered in this policy as projected risks from climate change, including saltwater intrusion into groundwater. There are no specific water or WASH actions mentioned in this policy except for having prepared supplies for DRR, including water supplies. There is a stated</p>

Name	Description
Climate change	action on preparing a national policy for resettlement and internal displacement following events, which was completed (see next document). Risk assessment is a strong focus for this policy.
National Policy on Climate Change and Disaster Induced Displacement 2018	This policy directly includes as one of its five groups of people covered by the policy "people living in informal or peri-urban settlements" and recognises such areas emerging in the peri-urban areas of Port Vila and Luganville. It names the following settlements as areas of growth: Blacksands, Mele and Mele Maat, Freshwota, Seaside town and Eratap. The policy aligns with the SDP in a guiding principle that: "the Government of Vanuatu has the core responsibility to protect and deliver essential services to its population, to enable community resilience to flourish." Another principle protects peoples voluntary and informed choices. One initial action under the policy is to establish a lead ministry in this area, recognising the lack of leadership in this space. The most relevant action is as follows: "Action 3.9 Prepare community-specific Durable Solutions plans for people living in informal settlements to ensure affected communities are included in national development planning and have access to health care, education, WASH, evacuation centres and other DRR measures and more. Durable solutions plans must be based on protection-centred principles and the guiding principles of this policy, as well as broad consultation and participation of affected communities, Line Ministries and other partners."
Climate change	The policy seeks to embed safeguard mechanisms to protect against evictions and removal, and mentions the integration with the Draft Greater Port Vila Plan and Strategic Plan for Port Vila in recognition that rezoning may displace residents that are in areas that would no longer be considered residential.
National Adaptation Programme for Action 2012-2022	Most of urban Vanuatu is dependent on groundwater use though indirectly (directly in areas around Blacksands, and indirectly through shallow wells around the Tagabe River managed by Unelco), and this implementation plan recognises that increased temperatures from climate change may increase demand on potable water and increased evaporation may decrease aquifer recharge, posing risks to urban water security.
Climate change	This document was prepared with assistance from AusAid in 2009 and has five key thematic areas: enhancing the governance of land, engaging customary groups, improving the delivery of land services, creating a productive and sustainable sector, and ensuring access and tenure security to all groups. All government, stakeholder and donor activities in relation to land are intended to adhere to this framework. An activity under the framework's fifth thematic area is to "Secure land rights of informal settlers through stabilisation and regulatory measures.". Apart from recognising that informal settlements tend to lack water and sanitation services, there is limited mention in this framework with respect to utility services. It also does not address climate change, reflecting the year that it was developed.
Land Sector Framework	
Urban planning	
Land Use Planning Policy	More detail in sections below
Urban planning	
Final Sanitation and Hygiene policy	The Sanitation and Hygiene Policy was developed by and is the responsibility of the Ministry of Health (MoH). It recognises that almost all of Vanuatu's population practices "fixed point defecation" (as opposed to water-transported sanitation) and therefore puts focus on enabling sanitation and hygiene markets. The policy includes six priorities and objectives, with activities developed beneath each. The Director of Public Health (MoH) is responsible under the Public Health Act for setting water, sanitation and hygiene safety standards. However, the policy does not include much wrt implementation options, indicators, timeframes or responsibilities for individual actions, but is rather a high-level document that sets out an approach. The first three priority areas focus mainly on hygiene promotion and awareness raising. The final priority area, concerning municipal by-laws, seeks to decentralise the regulatory model and allow Area Councils (Provincial and Municipal) to set and enforce sanitation by-laws.
WASH & WRM	

Name	Description
Water Policy with Annexures	The Water Policy was drafted to address a number of policy objectives in the SDP including ensuring safe water services for all. This policy is "owned" and is the responsibility of the Department of Water Resources (DoWR), in coordination with the Ministry of Health (MoH). According to the Policy, responsibilities wrt water in Vanuatu can be typified as follows: "safety" - MoH; "integrated" - Ministry of Internal Affairs (MoIA); "sufficient" - Ministry of Lands and Natural Resources (MoLNR)/DoWR; "compliant" - MoL & Public Works Department (PWD); "efficient" - Office of the Registrar of Cooperatives and Business Development Services; and "sustainable" - Ministry of Climate Change, Environment and Conservation. The Water Policy is significantly concerned with rural water, in the form of Rural Water Committees and mandated Drinking Water Safety and Security Plans for rural water supplies, however it also mentions a requirement under the Water Supply and Water Resource Management Acts for a DWSSP for urban areas too. The primary mention of urban areas is as follows: <i>"the Water Supply Act (1955) provides for the delegation of water management to private operators exemplified by Port Vila where a concessionaire finances the O&M and capital works from tariff revenues to deliver safe and secure piped drinking water."</i> The Director of Water Resources is responsible for setting urban water standards, but may delegate management to its concessionaire. Climate change is considered under a section of "Secure water futures", which commits to actions including strengthened risk management including mapping of water resources to enable investment in diversified water resources.
WASH & WRM	

In Table 6, a pairwise analysis of the thirteen documents is shown to assess the integration across the three themes. The analysis shows reference to any of the three themes in urban planning policy and regulation is limited, while climate change and urban planning are not extensively dealt with in WASH/WRM policy and legislation. Climate change policy has substantial consideration of WASH/WRM themes.

Table 6: Pairwise analysis of policy and legislation documentation

		Document type ¹			
		Cross-cutting (e.g., SDP)	WASH and WRM	Urban planning	Climate change
Theme	WASH and WRM ²	9	1678	6	539
	Urban planning ³	0	10	5	15
	Climate change ⁴	12	12	0	1217

1 - for document types, see Table 5Table 3

2 - "water" "water supply" "sanitation" "hygiene" "WASH" "catchment" "wastewater" "drainage" "septic" "sludge management" "sewage" "sewerage"

3 - "urban planning" "town planning" planning scheme" "zoning" "urban development"

4 - "climate change/s" "climate resilience" "climate adaptation" "adaptation" "resilience" "mitigation" "flood" "storm surge" "sea level rise" "drought" "extreme weather" "disaster"

7.2. Formal planning in Port Vila

Vanuatu has a National Land Use Policy to guide urban development, authorised in 2013. The National Land Use Policy outlines a vision of "A prosperous, equitable and sustainable land use sector for Vanuatu", with a mission to "provide and enabling environment for multi-stakeholder participation in the effective use, management and stewardship of Vanuatu's land resources". The policy highlights the principles of Kastom, Equity and Sustainable Development. In the section on urban areas (pg. 11) the policy recognises the challenge of rapid urbanisation and urban population growth in Vanuatu. It also highlights the tensions created by competing land use, especially urban expansion, peri-urban development and agricultural land uses. It notes that urban areas often comprise people from multiple islands, and that land consensus may rely on and challenge Kastom land use governance. As such, it emphasises the need for planning to occur in consultation with Kastom landowners and Council of Chiefs. Ultimately, the policy identifies the need for a National Urban Policy and an enhance Urban Affairs Committee to outline land use planning priorities and processes.

Port Vila has limited formal planning instruments at the local/city level. There have been a number of projects focused on urban development, including the Port Vila Urban Development Project (ADB, 2020).

The ADB project Greater Port Vila Urban Resilience Project (ADB, 2021) is aimed at improving urban resilience in Greater Port Vila (GPV) through capacity building, institutional strengthening, and the construction of two multipurpose emergency shelters. The project is expected to support the development of a Port Vila liveable city action plan, which will include recommendations on public safety with a particular focus on women and children, pedestrian friendly access, greater connectivity of public spaces, and retrofitting existing buildings to make them more accessible for people with disabilities, and opportunities for night markets.

The ADB project document mentions that it is guided by the Greater Port Vila Resilient Urban Development Strategy and Action Plan (GPV RUDSAP). However, it is unclear in the GPV RUDSAP is still in force.

7.2.1. Role, objectives and vision

The National Land Use Planning Policy aims to guide land use planning by setting priorities and outlining legislative and institutional settings to enable land use planning that encourages the best current use of our land resources and at the same time allowing for future generations equitably benefit from the same resources. This policy is a framework for land use planning, but recognises the lack of an Urban Policy. It recommends the reestablishment of an Urban Affairs Committee and the development of an Urban Policy; one that includes specific stakeholder engagement processes for land use planning decisions in urban and peri-urban areas as well as requiring land use planning processes that include zoning, development applications and controls. The policy requires the MoL&NR to produce and supply detailed land use capability maps and supporting information to rural land use planning authorities (including provincial councils). The maps and accompanying information must include but not be limited to soils, geology, topography, vegetation, risks and hazards; integrate formal mechanisms into land use planning processes that require key rural sector agencies to share information (including data, operational information and planning expertise. Finally, the policy recommends formally incorporating climate change projections and vulnerability assessments into urban land use planning processes (such as through mandated use of risk assessments).

Documents that mention the GPV RUDSAP suggest that which envisions that, by 2030, GPV is a safe, inclusive, resilient, and vibrant economic hub based on sustainable development. They also suggest it included objectives to improve safety, pedestrian access, greater connectivity of public spaces and enhance vibrancy in Port Vila.

7.2.2. Alignment with other policies

Any Port Vila plan would need to align with the Land Use Planning Policy, National Sustainable Development Plan (2016-2030) (The People's Plan) and its accompanying Implementation and Monitoring Framework for the National Sustainable Development Plan. Other relevant plans and policies include the Climate Change and DRR Policy 2016-2030, The National Adaptation Programme for Action 2012-2022. The Port Vila Urban Greening Master Plan is in development, requested by SPREP from an RFP. This is in theory due June 2022

7.2.3. Land rights

Land in Vanuatu falls into two main categories: customary ownership Indigenous custom owners or 'public land' held by the Government (Australian Red Cross, 2017). Both categories can be leased through a registered lease or sub-lease, an unregistered lease or sublease, or through informal tenure arrangements. There are many different combinations of these categories, and tenure arrangements are typically multi-layered. Port Vila contains a mix of both categories, and any plan or strategy would need to include details of what areas are covered by what land rights.

7.2.4. Implementation

The document analysis was unable to provide much insight into planning implementation in Port Vila. Related documents suggest that the GPV RUDSAP includes 67 interventions, of which 30 interventions are prioritized across seven broad areas totalling \$25 million. Priority interventions include Sanitation and wastewater infrastructure, Area and Ward Action Plans, Multipurpose evacuation shelters, Drainage and flood protection, Roads and drains, a Study for Economic Hub and Business Investment Centres and extension of the waterfront promenade (see Annexe 1 in Greater Port Vila Urban Resilience Project Administration Manual). Currently, zoning and building permits and leasing applications are dealt with at the national level, through the Ministry of Lands and Natural resources. The Ministry has developed zoning plans for Port Vila (<https://mol.gov.vu/index.php/en/what-is-zoning>). The Planning and Enforcement Unit within the Ministry deals with leasing and building permit processes (<https://mol.gov.vu/index.php/en/planning-and-enforcement-section>).

7.3. WASH in urban planning

In the absence of a specific Port Vila urban or town plan, this policy review was based on the higher-level Vanuatu Land Use Planning Policy (LUPP). Broadly, the LUPP does not integrate WASH service provision considerations with urban planning. It is noted that both the Water Policy and the Sanitation and Hygiene policies of Vanuatu address both urban and rural populations, although the number of objectives and actions for each in the urban space is limited. One key action of interest noted in the Water Policy is the establishment of a State-owned water company to provide urban water services.

- > Describes physical constraints for the provision of WASH services, including mapping
 - There is no mention of physical constraints within the LUPP specifically related to WASH.
 - The policy discusses the competing demands of urban expansion and agriculture.
 - There is no mapping within the LUPP.
- > Recognises physical and natural assets with respect to WASH
 - The LUPP does not recognise any physical or natural assets with respect to WASH in the urban environment of Port Vila.
- > Includes some objectives, actions or initiatives with respect to urban WASH provision and planning
 - The LUPP includes a policy direction to ensure that kastom is formally included in all land planning provisions, and this includes specific kastom aspects of water supplies.
- > Recognises roles and responsibilities with respect to urban WASH services
 - The LUPP does not include a recognition of roles and responsibilities for urban WASH services in Port Vila.
- > Includes spatial planning, zoning, and/or mapping of the physical city including WASH considerations
 - The LUPP does not include any spatial planning, zoning or mapping of Port Vila. It is known that this exists and is maintained by the Ministry of Lands Planning Division, although a draft (2016) zoning plan is yet to be gazetted (ref).

7.4. Climate change in urban planning

The Vanuatu Climate Change and Disaster Risk Reduction Policy 2016-2030 outlines the strategic priorities for Vanuatu's response to climate change. Given Vanuatu's high vulnerability to the impacts of disasters exacerbated by climate change, the focus is on disaster risk reduction. There is limited focus on urban areas specifically or land use planning. The Vanuatu Land Use Policy also does not mention climate change.

There is significant scope for climate change to be included within urban planning and policy as it is developed in Vanuatu and Port Vila more widely. It is highly likely that those developing and implementing planning at the government level are very aware of climate change and its impacts and reducing risks of climate change could be a major driver of urban planning processes in Port Vila and other urban areas in Vanuatu.

7.5. Informal settlement in Port Vila

Informal settlements exist across Port Vila but the document analysis revealed very little information on their extent. Recent studies have estimated almost 40% of the population of the greater Port Vila municipal area could reside in informal settlements (Sanderson & Souter, 2020). In Port Vila, settlements illegally occupying land are less common than informal lease arrangements between residents and customary landowners (Martin, 2011)

In June 2022, the World Bank and the Ministry of Lands and Natural Resources commenced a new urban development project – Vanuatu Affordable and Resilient Settlements (VARs) (World Bank, 2022). This project aims to develop a new area of low-cost housing, as well as upgrade four existing urban settlements. These upgrades include water, sanitation and drainage infrastructure upgrades.

> Does the plan recognise informal, unplanned or squatter settlement within the city?

The LUPP does not recognise informal, unplanned or squatter settlements. Informal settlements are recognised in the higher-level Land Sector Framework.

> Does the plan recognise a lack of water and sanitation services to informal settlements?

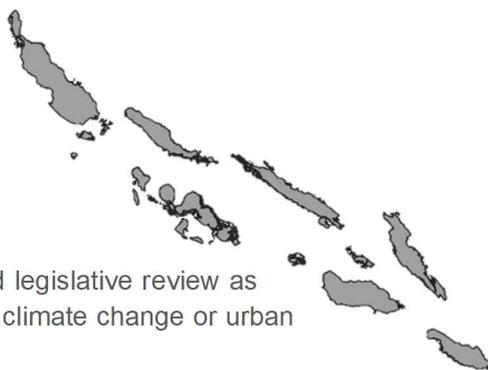
The Land Sector Framework recognises that informal settlements tend to lack water and sanitation services, although there is limited mention in of utility services or planning.

> Does the plan include some objectives, actions, or initiatives for upgrading WASH in settlements?

The Land Sector Framework includes a thematic area to secure land rights of informal settlers, through stabilisation and regulatory measures. The only other action for informal settlements is to undertake studies on informal settlements and urbanisation.

8. HONIARA – SOLOMON ISLANDS

8.1. Institutional framework for WASH, climate change and urban planning



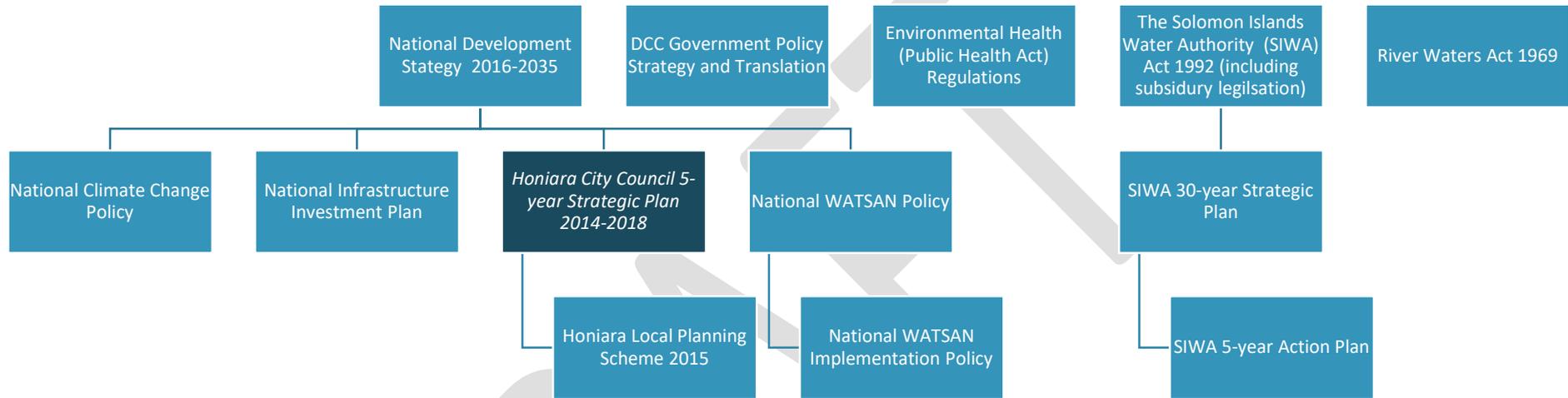
8.1.1. Responsible institutions

The following institutions were recognised within the policy and legislative review as having a role and responsibilities with respect to urban WASH, climate change or urban planning (or a combination):

- Ministry of Lands, Housing and Survey (MLHS) – land management, planning and compensation payments in water supply catchments
- Ministry of Health and Medical Services – Environmental Health Division – for the provision of safe water and sanitation to rural populations in Solomon Islands and monitoring quality.
- Ministry of Development Planning and Aid Coordination – sets overall development strategy including climate change planning.
- Minister for Environment, Climate Change, Disaster Management and Meteorology – environmental protection, climate monitoring and analysis, disaster risk management, climate change adaptation
- Water Resources Division (WRD), Ministry of Mines, Energy and Rural Electrification – national water resource assessment for water supply, hydro-power generation, and management and development of groundwater
- Guadalcanal Provisional Government (GPG) – provision of water and sanitation services to provincial populations, as well as administration and planning of lands within the province.
- Honiara City Council – urban planning, enforcement of building codes for rainwater collection and sanitation systems, drainage, sillage and waste management.
- Solomon Islands Water Authority (SIWA), now operating as Solomon Water (SW) – provision of safe water and some wastewater services to urban populations in the capital Honiara and, at present, in regional centres of Auki, Noro and Tulagi. The original mandate of SIWA is to supply all provincial urban centres, an extra seven.

8.1.2. Policy and legislation for urban planning, WASH and climate change

Fourteen policy and legislative documents were reviewed pertaining to Port Vila and the broader urban environment in Vanuatu (Figure 14). These ranged from national sustainable development plans to a Town Plan for Honiara. The documents are briefly described in Table 7.



Key – - document in place - document superseded - document proposed, in preparation or not accessible online

Figure 14: Documents reviewed for Honiara, Solomon Islands

Table 7: Document descriptions for Honiara

Name	Description
<p>National Development Strategy 2015 to 2035</p> <p>Cross cutting</p>	<p>The NDS vision is for a "improving the social and economic lives of all Solomon Islanders", and set outs a 20-year planning horizon to underpin all other governmental short and medium term plans. The NDS has been aligned with the Sustainable Development Goals. The vision is underpinned by 5 objectives and 15 Medium Term Strategies; Medium Term Strategy 3 seeks to expand and upgrade "weather resilient infrastructure" and utilities to focus on access to essential services; and Medium Term Strategy 5 seeks to improve provision of basic needs including water and sanitation . Water and sanitation is nominated as a high priority under Medium Term Strategy, including in urban areas. The plan recognises that only about 30% of Honiara has "rudimentary" sewerage services, discharged untreated to waterways with associated risks to public and environmental health. The policies and programs specified under MTS3 are clear about improving urban WASH provision and fostering reform at Solomon Water. Objective 4 of the NDS is to effectively respond to climate change and manage environmental risks, including pollution from inadequate sanitation. A policy action under this objective is to build capacity of development planners to integrate climate change adaptation into all policies and plans. Urban planning is not referenced in the NDS. A medium term priority action of note is to develop a national urbanisation policy that supports informal settlements and urban dwellers.</p>
<p>DCC Government Policy Strategy and Translation</p> <p>Cross cutting</p>	<p>This document represents the vision and policy of the current Solomon Islands government, and expresses its support for the NDS. On page 22 of 29 of the statement, the Democratic Coalition Government for Advancement first addresses WASH provision, by expressing support for Solomons Water reform and ensuring a safe and reliable water service. The statement also establishes a policy objective for a National Program to support climate resilient water supply and sanitation systems. Under this plan, The DCGA seeks to formalise current informal settlements within Honiara city and provincial boundaries.</p>
<p>The Solomon Islands Water Authority (SIWA) Act 1992 (including subsidiary legislation)</p> <p>WASH &WRM</p>	<p>Under this Act, Solomon Islands Water Authority is given powers to:</p> <ul style="list-style-type: none"> - Control, regulate, develop, manage, conserve and utilise urban water resources in the best interests of Solomon Islands, - Formulate national policies relating to the control and use of urban water resources - Ensure that the water supplied for consumption meets the prescribed water quality standards - Provide, construct, operate, manage and maintain buildings, works, systems and services for impounding, conserving, and supplying water for domestic, industrial, commercial and other purposes - Provide, construct, operate, manage and maintain buildings, works, systems and services for the conveyance, treatment and disposal of sewage, disposal of trade and industrial waste and other connected purposes <p>Further, the Minister can gazette any part of Solomon Islands to fall under the Act, though at present this is restricted to Honiara.</p>
<p>SIWA Act 1992 Catchment Areas Regulations</p> <p>WASH &WRM</p>	<p>These regulations control activities within designated catchments. It prohibits the erection or operation of sewage collection, treatment or disposal systems in catchment areas unless they comply with standards approved by SIWA. It further restricts activates such as the keeping of stock and the use of pesticides within catchment areas.</p>
<p>River Waters Act 1969</p> <p>WASH &WRM</p>	<p>This Act governs any surface water body either natural or artificial, and allows for permits for diverting surface waters and prohibits obstruction of any waterway. The construction of dams and river offtakes is subject to this legislation.</p>

Environmental Health Regulations	<p>These regulations establish the responsibility for the provision of public sewers and sewage disposal works to fall with the local authority within its district. Section 83 of this Act states: <i>In every urban sanitary district, every building intended for human occupation shall be provided with a sufficient latrine and dustbin and with proper drains for the efficient carrying off of storm and slop water to the satisfaction of the local authority: Provided that if in the opinion of the local authority, having regard to the number and description of the persons occupying or using such building, more than one such latrine or dustbin should be provided, the local authority may by written notice require the owner or occupier of the building within a reasonable time therein specified to provide such additional number of latrines and dustbins or either of them as the case may require.</i> Further clarification on who is obligated to provide latrines is detailed under this Act.</p>
WASH &WRM	
National Climate Change Policy 2012-2017	<p>This policy, released in 2012, sets out a vision for the Solomon Islands that recognises the impacts of climate change and enacts appropriate mitigation and adaptation measures in response. The CC Policy recognises that water resources are likely to be seriously affected by climate change and nominates them as a priority vulnerable area. Water supply and sanitation is nominated as a main vulnerable sector. The policy presents substantial discussion of the climate drivers and impacts to the Solomon Islands, and several policy directions under the overall vision of a resilient, secure and sustainable Solomon Islands.</p>
Climate change	
National Infrastructure Investment Plan 2013	<p>Developed by the Ministry of Development Planning and Aid Coordination, the purpose of this document is present the priorities for major economic infrastructure investment in the 10 year period from 2013. It covers 7 sub-sectors, including Water Supply and Sanitation. In the section addressing this sub-sector, informal housing is noted as particularly vulnerable in the urban area with respect to poor or inadequate sanitation. MS4 is a project defined under this plan (Honiara Urban Development), and it is described as a "<i>Multi-sector integrated urban development of greater Honiara. Feasibility study followed by investment in a range of urban infrastructure services.</i>" Activities under this project include assisting Honiara City Council to integrate climate change resilience into its short, medium and long term planning. The agencies responsible for this project are nominated as the Ministry of Lands and Housing, Honiara City Council, and Guadalcanal Provincial Government. A key project benefit is intended to be detailed spatial plans showing concentrations and linkages of various infrastructure and services.</p>
Cross cutting	
Greater Honiara Urban Development Strategic Action Plan (GHUDSAP)	<p>For detail - see following sections.</p>
Urban planning	
Honiara City Council 5-year Strategic Plan 2014-2018	<p>This plan is not readily available online however it is referenced in the GHUDSAP. Its overarching vision is "The City of Honiara is acknowledged as a clean, safe, harmonious, environmentally responsible, prosperous and resilient capital city providing a high quality of life for its multi-cultural community and its visitors." Upgrading of informal settlements is one of 129 plans of action defined by this plan, as well as conversion of Temporary Occupation Leases to Fixed Term Estate status. The plan also establishes effective infrastructure development as a key objective.</p>
Urban planning	
Honiara Local Planning Scheme 2015	<p>This Local Planning Scheme (LPS), "Shaping Honiara's Future", was released in 2015 by the Ministry of Lands, Housing and Survey. It defines the grouping and hierarchy of land uses in Solomon Islands, and provides the planning framework and standards for development within the urban area. One LPS objective is to preserve land (easements) essential for public infrastructure development, including water supply. It provides a flooding overlay, and planning controls in flood-prone areas; and a utility overlay with controls on development near or in easements. Infrastructure standards are included.</p>
Urban planning	
Solomon Islands National WATSAN Policy (2017)	<p>The National WATSAN Policy was developed out of the 2016-2035 NDS, and sets out the strategy for WASH provision in urban and rural areas. It was prepared by the National Water Coordination Committee appointed under the Ministry of Mines, Energy and Rural Electrification. The policy has 7 policy goals, and the last is with respect to climate change and climate extremes. Informal settlement is not mentioned at all in the policy.</p>
WASH & WRM	

<p>Solomon Islands WATSAN Implementation Plan</p> <p>WASH & WRM</p>	<p>This implementation plan sets out the pathway to achieving the policy objectives of the National WATSAN Plan and the NDS. It addresses rural and urban communities. For each of the seven policy goals expressed under the WATSAN Policy, this plan establishes 2-5 policy objectives to meet that goal. An activity under the plan calls for the development of a Water Master Plan for all urban centres, as well as their progressive implementation.</p>
<p>SIWA 30YearStrategicPlan- MainReport</p> <p>WASH & WRM</p>	<p>Informal settlements are well-addressed in this strategic plan, featuring in a dedicated section and in several places throughout. This plan makes clear that SIWA is awaiting SIG direction for appropriate supply options for informal settlement areas. SIWA include the results of a Willingness to Pay study by PRIF in 2016, indicating majority of both formal and informal settlement residents were willing to pay for improvements to piped water, however, the majority also thought the cost of water from SIWA was too high. The plan notes an opportunity for SIWA to work with national and local government to integrate water and sanitation service easements into spatial and urban planning.</p>

In Table 8, a pairwise analysis of the fourteen documents is shown to assess the integration across the three themes. The analysis suggests climate change policy and legislation does not substantially consider WASH/WRM or urban planning themes, while urban planning documentation has a reasonable split across the themes. WASH/WRM policy and legislation references climate change throughout.

Table 8: Pairwise analysis of policy and legislation documentation

		Document type ¹			
		Cross-cutting (e.g., SDP)	WASH and WRM	Urban planning	Climate change
Theme	WASH and WRM ²	820	3687	130	8
	Urban planning ³	34	20	194	0
	Climate change ⁴	682	239	90	486

1 - for document types, see Table 7Table 5Table 3

2 - "water" "water supply" "sanitation" "hygiene" "WASH" "catchment" "wastewater" "drainage" "septic" "sludge management" "sewage" "sewerage"

3 - "urban planning" "town planning" "planning scheme" "zoning" "urban development"

4 - "climate change/s" "climate resilience" "climate adaptation" "adaptation" "resilience" "mitigation" "flood" "storm surge" "sea level rise" "drought" "extreme weather" "disaster"

8.2. Formal planning in Honiara

The Greater Honiara Urban Development Strategy and Action Plan (GHUDSAP) released in September 2018 was developed by the Solomon Islands Government's Ministry of Lands, Housing, and Survey (MLHS) with support from the Asian Development Bank (ADB). This plan is based on and refers to two key Honiara development documents – the Honiara City Council Strategic Plan 2014-2018 and the Honiara Local Planning Scheme 2015.

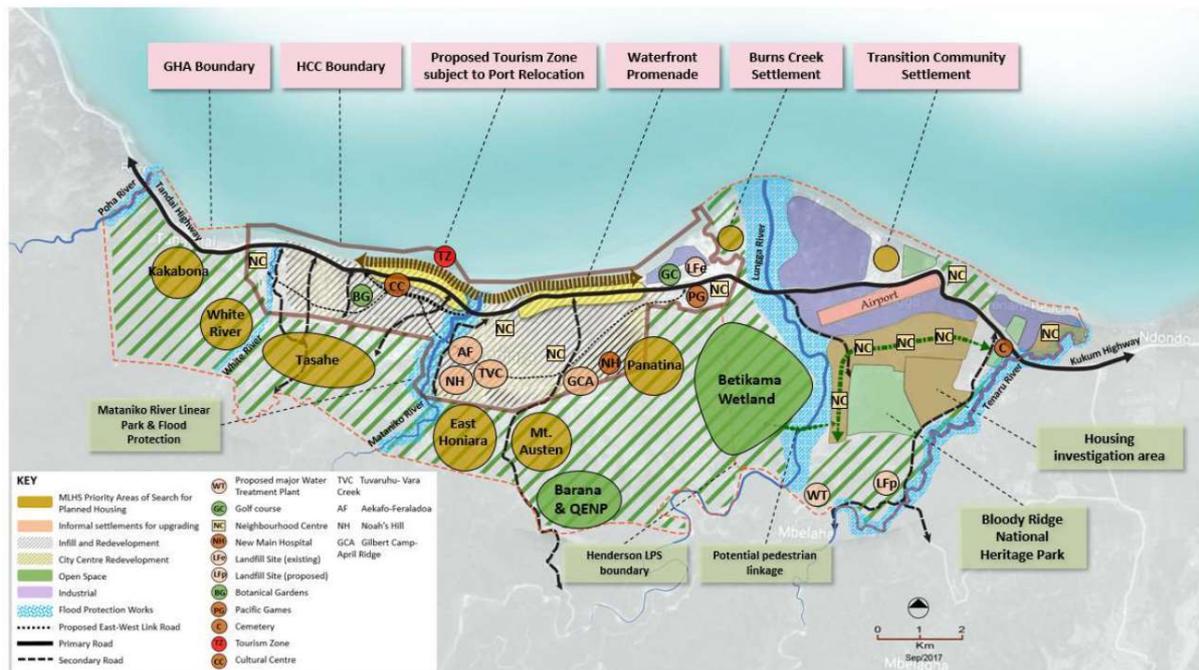
8.2.1. Role, objectives and vision

The GHUDSAP was developed in response to the expiry of Honiara City Council's 5-year Strategic Plan and rapid urban growth and covers Honiara City, and adjacent areas of Guadalcanal Province particularly Tandai and Malango Wards. It provides a vision of Honiara that is Peaceful, Resilient, Inclusive, Sustainable, Master-planned and with Effective governance.

The GHUDSAP provides a detailed analysis of the development context and identifies a number of key urban challenges, including (i) inadequate infrastructure to meet demands of rapid population growth; (ii) scarcity of land for housing; (iii) the unaffordable private real estate market; (iv) growth of informal settlements; (v) development in areas prone to hazards and climate change impacts; and (vi) poor planning resulting in inappropriate use of land, unsuitable building design and construction and a lack of integration with infrastructure.

It also uses a SWOT analysis to identify key issues and needs to address these challenges, and produces a set of strategic issues. In response, the GHUDSAP identifies a ‘preferred development scenario’ (Figure 15) for Honiara intended to provide an integrated framework for physical development and ensure that subsequent actions are aligned with the Vision and strategic Goals for GHUDSAP.

Figure 15: Honiara “preferred development scenario” (SIG MLHS, 2018)



Source: ADB TA Consultant as consolidated from the outputs of the Stakeholders Forum (4 July 2017).

8.2.2. Alignment with other policies

The plan aligns with the National Development Strategy (NDS) 2016-2035, the draft National Urban Policy Framework 2035, National Infrastructure Investment Plan (NIIP) 2013 and the National Disaster Risk Management Plan (NDRMP) 2010.

The GHUDSAP was also prepared within the framework of Honiara City Council (HCC) and Guadalcanal Provincial Government’s (GPG) priorities. It aligns with the HCC 5-Year Strategic Plan 2014-2018, Honiara Local Planning Scheme (LPS) 2015-2020 and the Honiara Urban Resilience and Climate Action Plan (HURCAP) 2016. The visions in these plans contributed to the development of the vision for the Greater Honiara Area and the plan takes into account the issues, actions, and policies within these plans. Note that the Honiara Local Planning Scheme includes a Citywide Structure Plan and a Zoning Plan, which specifies what land uses and development would be permitted or prohibited in each zone.

8.2.3. Land rights and tenure

Most lands in the GHA are classified as Crown Land or are in Solomon Islands government ownership. Some customary lands exist in two small pockets in HCC and within Guadalcanal Province. The plan includes a discussion on the implications of Customary land issues for development planning in an Appendix. The plan also notes that the Planning and Development Act 2017 enables local planning schemes and other plans to have jurisdiction over Customary Land that has been registered; whereas previously legislation gave no planning control over any Customary Land at all.

8.2.4. Implementation

The plan provides guidance on what are required of the Solomon Islands Government (SIG), State Owned Enterprises (SOEs), HCC, GPG, development partners and other stakeholders to ensure that

their initiatives are well-coordinated to yield optimal results. However, stakeholders involved in developing the plan strongly felt that development should be controlled by a planning and coordinating agency that would effectively integrate the planning and investment functions of the several national Ministries, SOEs, and City and Provincial administrators that have direct roles in providing essential services within the GHA.

The plan proposes that an Executive Council, composed of representatives from key ministries as well as from HCC and GPG, should be responsible for coordinating the implementation of actions identified under GHUDSAP, with a mandate and authority established through legislation. The plan states that “At least 30% of the members on the Executive council shall be women”.

In the interim, the plan outlines a GHA Coordinating Committee to be established through a Memorandum of Understanding (equivalent) between SIG, HCC, and GPG. The Coordinating Committee chaired by the Permanent Secretary of MLHS with the Mayor of HCC and Premier of GPG as Deputy Co-chairpersons and with 15 members comprising representatives from SIG, HCC, GPG, non-government organisations, private sector, and youth. Again, the plan requires that at least 30% of the members of the GHA Coordinating Committee be women.

It is not clear from the GHUDSAP how zoning or development applications and approvals will be implemented under the strategy. Currently, zoning and building permits and leasing applications are handled by Honiara City Council based on the Honiara Local Planning Scheme (<https://honiaracitycouncil.com/index.php/rates-business-and-development-2/building-and-development-in-honiara-2/planning-and-zoning-in-honiara/>)

8.3. WASH in urban planning

The primary urban planning documents in Honiara is the Greater Honiara Urban Development Strategy and Action Plan (GHUDSAP) and the Honiara Local Planning Scheme (LPS). The following elements of urban WASH service provision were assessed within this plan. Broadly, the GHUDSAP integrates some elements of WASH service provision planning with urban planning, however it is not comprehensive. The LPS includes a utilities overlay and a flood overlay; the former is to introduce and protect easements for utility service providers including Solomon Water, and the latter is to restrict development in flood-prone areas. The utility overlay also includes planning controls dictating new subdivisions must have allowance for expansion of the infrastructure network.

The WATSAN Policy of Solomon Islands addresses both rural and urban WASH issues and provides actions and policy objectives against both. Some of these for urban populations include having fair, equitable and tiered water tariffs for urban residents, and proper construction of sewer outfalls to minimise pollution. However, there is limited forward planning of urban WASH services in the policy.

- > Describes physical constraints for the provision of WASH services, including mapping
 - The GHUDSAP does not include mapping of physical constraints to WASH services
 - Narrow valleys, steep slopes, flooding and landslips are described, particularly in relation to informal settlements in hazardous areas. However, these are not explicitly discussed with reference to the provision of WASH services.
- > Recognises physical and natural assets with respect to WASH
 - Physical assets mentioned in the GHUDSAP include the “water supply system” (components not specified in the plan, but include a 16-borefield network, treated water storages and transmission lines, rainwater tanks (communal and household); communal standpipes; wastewater outfalls along the coast and the Mataniko river (12 no., untreated); onsite sanitation systems; septage services managed by GPG and HCC; septage disposal at Ranadi solid waste landfill.

- The Mataniko river, as well as transporting sewage wastes, is one of three major rivers catchments within the urban area, the other two being White and Lungga rivers. All three are recognised to flood.
 - The Betikama Wetland is located just west of the airport. It is not noted in the GHUDSAP in relation to any WASH considerations.
- > Includes some objectives, actions or initiatives with respect to urban WASH provision and planning
- Improved access to basic services such as water and sanitation are noted as outputs of the GHUDSAP, however there appears to be limited actions specifically intended to address this.
 - The proposed development plan put forward by the GHUDSAP includes two WASH-related
 - o A new major water treatment plan proposed for the southern edge of Henderson
 - o River corridor linear parks and flood protection works along the Mataniko, White and Lungga rivers.
- > Recognises roles and responsibilities with respect to urban WASH services
- The GHUDSAP includes a description of the responsible agencies for urban service provision (Table 2), identifying the Solomon Islands Water Authority (SIWA) as the primary agency for water, wastewater, drainage and flood control. This includes investment and operation.
 - Development partners are also recognised to contribute to the development of essential services such as water supply (DFAT, JICA, EU and UNICEF).
 - The plan discusses the constraints on HCC and GPG in controlling investments and strategies for key infrastructure such as water and wastewater.
- > Includes spatial planning, zoning, and/or mapping of the physical city including WASH considerations
- The GHUDSAP includes a mapped “preferred development scenario” that locates the proposed water treatment plant and recognises some of the environmental assets such as the Betikama wetland and Mataniko linear park and flood protection.
 - There are maps for three separate stages of the preferred development scenario, representing five-year periods from 2018 onwards.

8.4. Climate change in urban planning

Solomon Islands released a National Climate Change Policy: 2012-2017, which identified key climate drivers and trends and outlined key policy outcomes, directives and strategies at a national level. It identified trends of increasing temperatures and decreasing rainfall for Honiara, increasing the risk of droughts, as well as sea-level rise and increased intensity of cyclone. It noted the need for risk reduction and vulnerability assessments of urban settlements in Honiara. However, does not provide specific guidance for urban areas or discuss the role of urban planning for responding to climate change.

The GHUDSAP identifies vulnerability to natural disasters and climate change impacts as a key development issue for Honiara and a driver to establishing the plan itself, and includes a specific goal to “Improve resilience to natural hazards and climate change”. It identifies sea level rises and exacerbated disasters (Cyclones, heavy rain, strong winds, flooding, landslides, storm surge) as key risks in Honiara.

The GHUDSAP does not provide specific actions for climate change adaptation but considers building resilience to climate change as a key objective that is guiding the strategy and related action. Given the implementation challenges identified by the GHUDSAP, it is not clear how effective the plan will be in building resilience to climate change. However, the importance of climate change and its impacts document does suggest that climate change is being integrated into urban planning in Honiara.

8.5. Informal settlement in Honiara

The GHUDSAP plan estimates that, as of 2016, the population in the informal settlements was approximately 28,000 (nearly 4,000 households) and accounted for about 40% of Honiara's total. Growth of informal settlements was increased by accelerated migration from the provinces after the civil unrest that occurred from 1998 to 2003. Importantly, the plan notes that that even middle- and high-income earners are moving to informal settlements due to a lack of formal housing and high rents.

> Does the plan recognise informal, unplanned or squatter settlement within the city?

Yes – the GHUDSAP plan defines informal settlements as largely residential areas which have been developed without legal claims to land and/or permission from authorities. It notes that these often stem from the issuances of “license to occupy public land” commonly known as Temporary Occupation License (TOL), which began under the British Protectorate after World War II and are still being issued today under the Land and Titles Act. The plan notes that “by 2004, the administration and management of the TOL by the MLHS had totally collapsed”.

Further, in the early 1980s, informal settlements were zoned as “Temporary Housing Areas” (THA), which allowed dwellers to build non-durable houses similar to those in the rural villages without building permits. The temporary nature of and lack of building permits in THAs means the government has not been committed to provide basic services to its residents.

The Local Planning Scheme defines “TOL sites”, with a reference to them being informal.

> Does the plan recognise a lack of water and sanitation services to informal settlements?

The GHUDSAP mentions a 2006 study that found about 44% of residents living in informal settlements were connected to the Solomon Water network.

> Does the plan include some objectives, actions, or initiatives for upgrading WASH in settlements?

The GHUDSAP includes a key component under the preferred development scenario of upgrading priority informal settlements. This presumably includes improved services such as water and sanitation.

The LPS has an objective of providing design guidelines in informal settlement areas. This appears to be restricted to flexible road width and setback standards for TOL sites (informal settlements).

9. REFERENCES

- ADB. (2020). *Port Vila Urban Development Project: Project Completion Report*. Retrieved from Port Vila, Vanuatu: <https://www.adb.org/projects/documents/van-42391-013-pcr>
- ADB. (2021). *Vanuatu: Greater Port Vila Urban Resilience Project*. Retrieved from Port Vila, Vanuatu: <https://www.adb.org/projects/52031-001/main#project-pds>
- Chigbu, U. E., & Onyebueke, V. U. (2021). The COVID-19 pandemic in informal settlements:(re) considering urban planning interventions. *The Town Planning Review*, 92(1), 115-121.
- Connell, J. (2011). Elephants in the Pacific? Pacific urbanisation and its discontents. *Asia Pacific Viewpoint*, 52(2), 121-135.
- Corburn, J., Vlahov, D., Mberu, B., Riley, L., Caiaffa, W. T., Rashid, S. F., . . . Martínez-Herrera, E. (2020). Slum health: arresting COVID-19 and improving well-being in urban informal settlements. *Journal of urban health*, 97(3), 348-357.
- EMTV Online (Producer). (2021). Hivaso Concept Issues.
- Jones, P. (2007). Placing urban management and development on the Pacific Island. *Australian planner*, 44(1), 13-15.
- Jones, P. (2012). Pacific urbanisation and the rise of informal settlements: Trends and implications from Port Moresby. *Urban Policy and Research*, 30(2), 145-160.
- Jones, P. (2016). The emergence of Pacific urban villages: urbanization trends in the Pacific islands.
- Jones, P., & Suhartini, N. (2014). Reframing approaches to conceptualising urban governance in Melanesia: Insights from Jayapura and Port Moresby. *Jurnal Perencanaan Wilayah dan Kota*, 25(2), 96-114.
- Keen, M., & Connell, J. (2019). Regionalism and resilience? Meeting urban challenges in Pacific Island states. *Urban Policy and Research*, 37(3), 324-337.
- Martin, B. (2011). Water is Life: Governance, Policy and Local Responsibility in Pacific Case Studies 2008–2010. In (pp. 21). New Zealand: Winston Churchill Fellowship.
- NDCD. (2021). *Port Moresby Towards 2030 Urban Development Plan Review*. Retrieved from <https://www.planportmoresby.com/>
- Northridge, M. E., & Freeman, L. (2011). Urban planning and health equity. *Journal of urban health*, 88(3), 582-597.
- Phillips, T., & Keen, M. (2016). Sharing the city: Urban growth and governance in Suva, Fiji.
- Rooney, M. N. (2021). "We Want Development": Land and Water (Dis) connections in Port Moresby, Urban Papua New Guinea. *the contemporary pacific*, 33(1), 1-30.
- Sanderson, R., & Souter, R. (2020). Investigating the transmission of faecal pathogens in urban informal settlements in and around Port Vila, Vanuatu, recognising biophysical and demographic diversity – Faecal pathogen transmission exposure typologies. In (*Research Brief*) (pp. 13). Brisbane, Australia: International WaterCentre, Griffith University.
- SIG MLHS. (2018). *Greater Honiara Urban Development Strategy and Action Plan (Volume I)*. Retrieved from Honiara, Solomon Islands: <https://www.adb.org/sites/default/files/project-documents/49460/49460-001-dpta-en.pdf>
- Simo, J. (2010). Land and the Traditional Economy: 'Your Money, My Life' Hu i kakae long basket blong laef? *In defence of Melanesian customary land*, 40-44.
- Sloan, J. (2019). Fiji Planning law: Fiji's government has announced new Town Planning Schemes may be adopted for Suva, Lautoka and Nadi - an opportunity for consultation and good decision making. *Ocean Law Bulletin*.

Retrieved from <https://www.sas.com.fj/ocean-law-bulletins/fiji-planning-law-fijis-government-has-announced-new-town-planning-schemes-may-be-adopted-for-suva-lautoka-and-nadi-an-opportunity-for-good-d-15616938>

Souter, R., & Orams, P. (2019). *Water and Sanitation Services for Informal Settlements in Honiara, Solomon Islands*. Retrieved from

TLTB. (2018). *iTaukei Land Trust Board (TLTB) Regional Land Release Plan for the Greater Suva Area*. Retrieved from Suva, Fiji: <https://www.tltb.com.fj/getattachment/Annual-Report/Suva-Master-Plan/TLTB-GWCR-PLANNING-REPORT.pdf.aspx?lang=en-US>

Water PNG. (2020). Clearance determination - Eda Ranu and Water PNG [Press release]. Retrieved from <https://www.waterpng.com.pg/index.php/media-menue/news/53-news/271-iccc-granted-clearance-on-eda-ranu-and-water-png-merger>

World Bank. (2021a). *World Bank Open Data - urban population (% of total) - Fiji*. Retrieved from: <https://data.worldbank.org/>

World Bank. (2021b). *World Bank Open Data - Urban population growth (annual %) - Fiji, Solomon Islands, Vanuatu, Papua New Guinea*. Retrieved from: <https://data.worldbank.org/>

World Bank. (2022). Making Vanuatu's Settlements Safer, Stronger and More Affordable [Press release]. Retrieved from <https://www.worldbank.org/en/news/press-release/2022/03/17/making-vanuatu-s-settlements-safer-stronger-and-more-affordable#:~:text=The%20Vanuatu%20Affordable%20and%20Resilient,existing%20settlements%20in%20Port%20Vila>.