

Tuvalu

Priority Infrastructure Investment Plan 2020–2025



Ministry of Finance

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The Tuvalu Infrastructure Investment Plan 2020–2025 developed in this document was endorsed and adopted by the Tuvalu Cabinet in December 2020 as a guide to public infrastructure investment planning and budgeting, and development partner support.

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Abbreviations

DCC	Development Cooperation Committee
NISC	National Infrastructure Steering Committee
PRIF	Pacific Region Infrastructure Facility
SDG	Sustainable Development Goals
TISIP 2016	Tuvalu Infrastructure Strategy and Investment Plan 2016–2025
TK III	Te Kakeega III—National Strategy for Sustainable Development



1. Introduction

The Tuvalu Infrastructure Strategy and Investment Plan (TISIP) was endorsed by cabinet in December 2016 and presented the government's investment priorities in social and economic infrastructure over 2016–2025. TISIP implementation has progressed well with over 80% of priority projects either completed or ongoing (Appendix 1).

This paper presents the Tuvalu Priority Infrastructure Investment Plan 2020–2025 (the Infrastructure Plan), which is expected to update the TISIP, guide public investment planning and budgeting, and seek development partner support.

2. Background and Strategic Priorities and Infrastructure Drivers




Tuvalu's 9 atoll islands are scattered over 500,000 square kilometers of the western Pacific Ocean. The total land area is 26 square kilometers, and all the islands are less than 4 meters above sea level. The islands are made up of infertile sandy or gravel coralline soil, which limits agricultural development and food security. In most places, the island is less than 75 meters wide, which provides limited space for development.

Fongafale, the capital, is home to over 50% of the country's population of 10,507.¹ It is also the location of the country's hospital, primary school, a branch campus of the University of the South Pacific, radio station, main port, international airport, power and water utilities, and most businesses.

Tuvalu's geography makes it susceptible to the impacts of climate change, given that the highest elevation is less than 4 meters above sea level. Storm surges, king tides, and floods are common occurrences and have intensified due to changes in weather patterns and sea-level rise (estimated by some at about 5 millimeters/year). Recent studies predict that sea level may increase up to 0.97 meters in the next 100 years.²

¹ Government of Tuvalu. 2017. Tuvalu Census and Housing 2017 Mini Census Report.

² TCAP Lidar presentation.



The predicted impacts of climate change on Tuvalu are of critical concern to the government and people. The government is committed to addressing these issues and has made climate adaptation its highest priority. Adaptation to climate change is essential for Tuvaluans to remain in the country and continue their unique culture and way of life.

Tuvalu faces other development challenges with its small population, remoteness, and vulnerability to external shocks. With weak productive capacity, limited agriculture, heavy reliance on one primary commodity (fish), the country is marginalized in global trade. Its vulnerability is exacerbated by limited connectivity, a small private sector—the government is the largest employer—and education and health challenges.

Tuvalu's Te Kete National Strategy for Sustainable Development covers strategic development goals for 2021–2030, aiming for a peaceful, resilient and prosperous Tuvalu. Strategic Priority Area 5 of Te Kete—infrastructure development—includes seven priority areas: water and sanitation, telecommunications, power and renewable energy, waste management, civil aviation, maritime transport, and roads. TK III builds on TK II, adding emphasis on climate change, environment, migration and urbanization, and the ocean.

In September 2019, the government announced new priorities through its Vision and Policy Direction of the New Government document, which promotes poverty alleviation, social inclusion, greater resilience, a reduction in vulnerability, and financial stability. Embedded in the document are 100-day priorities and a 4-year roadmap, including important infrastructure to address climate change challenges while improving social and economic development.

The COVID-19 pandemic in 2020 has also affected Tuvalu. The government responded by establishing a health task force in late January and adopting strict border restriction measures, with all flights and vessels operating only for essential supplies, with significant impact on the economy. The government took measures to support businesses and Tuvaluans in need.

In December 2020, the government developed a new National Strategy for Sustainable Development Plan Te Kete which focuses on a peaceful, resilient and prosperous Tuvalu. It builds from the TK-III to include climate adaptation and responses to health shocks. The Strategic Priority Area 5 of Te Kete-Infrastructure development focuses on renewable energy, resilient housing, national shipping and water supply.

The government is revising the TISIP 2016 to better align infrastructure requirements to the needs of the population and the threats of climate change, which are embedded in the government's new priorities represented in the Te Kete, the Vision and Policy Directions, 4-year roadmap, and 100-day plan.

The Infrastructure Plan covers 2020 to 2025 and prioritizes climate change, economic, and social infrastructure projects vital for Tuvalu's sustainable development.

3. Priority Infrastructure Investment Plan 2020–2025

3.1 Establishing Project Lists

The Ministry of Finance led the revision of the TISIP, working closely with the National Infrastructure Steering Committee co-chaired by Ministry of Finance and the Minister of Public Works, Infrastructure, Environment, Labour, Meteorology and Disaster.³ The National Infrastructure Steering Committee advises the Tuvalu Cabinet on Government major infrastructure projects and provides guidance and direction to the TISIP revision.

The Ministry of Finance worked closely with the subcommittee of the National Infrastructure Steering Committee at an operational level and conducted consultation meetings with 27 government agencies and nongovernment organizations for project development and prioritization. The list of consultations is in Appendix 2.

TISIP 2020–2025 focuses on major infrastructure projects of national significance seeking funding. Ongoing and already committed infrastructure projects are not included.

A total of 20 projects were sourced from government ministries and state-owned enterprise corporate plans, the Te Kakeega III—National Strategy for Sustainable Development, and the 4-year and 100-day roadmap documents. Of the 20 infrastructure projects identified and assessed, 16 were selected for prioritization, the projects listed by sector below:

Energy

- Renewable Energy in Funafuti and Outer Islands

Climate Change

- National Adaptation and Reclamation–Option Study

Social

- National Climate Proofing Housing Project
- Tuvalu National Evacuation Centres and Sports Complex
- Education Infrastructure Building Upgrade
- National Library and Archives
- New Parliament house
- New Police complex



³ The Steering Committee comprises the Secretary of Public Works, Infrastructure and Environment, Secretary of Finance, Director of Planning, Budget and Aid Coordination Department, Director of Public Works Department, Director of Marine Department, Secretary of Transport, Energy and Tourism, Secretary of Local Government and Agriculture, Director of Rural Development, Director of Lands & Survey, Director of Environment, Secretary of Justice, Communication and Foreign Affairs and has development partner representatives.

Telecommunications

- Submarine Cable

Transport–Aviation

- Establishment of International Runway on Reclaimed Land
- Domestic Air Services

Transport–Land

- Motufoua Tarseal Project

Transport–Maritime

- Nui Workboat Harbour Project
- Manu Folau vessel Replacement

Waste Management

- Organic Waste Management
- Solid Waste Management

3.2 Prioritization Methodology

The Ministry of Finance first evaluated project proposals against the following criteria:

- Strategic alignment to confirm consistency with the Te Kakeega III—National Strategy for Sustainable Development.
- Timing to confirm the investment is required in the next 5 years.
- Clarity of scope to confirm the project is at a point that warrants prioritization.

The 16 projects that progressed beyond the initial screening were scored and ranked according to a multi-criteria analysis, similar to the previous TISIP. The criteria are consistent with the Recovery and Vulnerability Reduction Plan and TK III (Table 1).



Table 1: Project Prioritization Criteria

RVRP Plan	TK III Strategic Areas	Criteria TISIP 2020–2025	Links to TK III strategic areas
<p>1. Households are appropriately supported to recover from the Tropical Cyclone Pam crisis.</p> <p>2. To support the construction and repair of damaged infrastructure (coastal protection, sea walls, permanent shelters, and community infrastructure).</p> <p>3. Chronic levels of food security and malnutrition are addressed through integrated programming to build resilience.</p>	<p>Strategic Area 1: Climate change</p> <p>Strategic Area 2: Good Governance</p> <p>Strategic Area 3: Growth and Stability</p> <p>Strategic Area 4: Health and Social Development</p> <p>Strategic Area 5: Falekaupule and Island Development</p> <p>Strategic Area 6: Private Sector, Employment and Trade</p> <p>Strategic Area 7: Education and Human Resources</p> <p>Strategic Area 8: Natural Resources</p> <p>Strategic Area 9: Infrastructure and Support Services</p> <p>Strategic Area 10: Environment</p>	<p>1. Climate Change/Environment</p> <p><i>a. Resilience of the asset</i> How resilient is the asset to the potential effects of climate variability, climate change, and natural hazards?</p> <p><i>b. Disaster risk management or climate change adaptation function</i> Does the project have specific objectives or components relating to disaster risk management or climate change adaptation for the broader community?</p> <p><i>c. Impact on the environment</i> Will the project have positive, neutral, or negative impacts on the environment (e.g., land, coastal and marine environments, water resources)?</p> <p>2. Economic</p> <p><i>a. Impact on costs and efficiency of infrastructure users</i> Will the project result in lower costs for infrastructure users through lower tariffs or slower growth in tariffs, time savings, reduced operating costs?</p> <p><i>b. Impact on economic growth and employment</i> Will the project facilitate expansion of industries (e.g., fisheries, agriculture, wholesale and retail, tourism)?</p> <p><i>c. Maintenance of essential services</i> Is the project critical to maintaining essential economic infrastructure services?</p> <p>3. Social</p> <p><i>a. Improved social services</i> Will the project facilitate improvements in the delivery of health and/or education services?</p> <p><i>b. Service coverage</i> Will the project extend social service coverage to new areas and/or more people and prevent loss of coverage?</p>	<p>1, 5, 9, 10, 12</p> <p>3, 6, 8, 9</p> <p>4, 5, 7, 9, 11</p>

RVRP Plan	TK III Strategic Areas	Criteria TISIP 2020–2025	Links to TK III strategic areas
		<p><i>c. Other social benefits</i> Will the project have other social benefits for the community (e.g., improving the lives of women and children, assisting vulnerable/disadvantaged groups, alleviating poverty, responding to rural/urban drift, improving safety)?</p> <p>4. Project Sustainability</p> <p><i>a. Financial</i> Will the project be able to support the ongoing costs of operation and maintenance through user charges, among others?</p> <p><i>b. Technical</i> Will the technology used in the project be appropriate and able to be operated and maintained?</p> <p><i>c. Institutional</i> Will the institution responsible for the project have sufficient capacity for implementation, operation and maintenance?</p>	2, 5, 9

Note: RVRP = Recovery and Vulnerability Reduction Plan, TISIP = Tuvalu Infrastructure Strategy and Investment Plan, TK II = Te Kakeega III, National Strategy for Sustainable Development 2016–2020.

Source: Tuvalu Infrastructure Strategy and Investment Plan, April 2017.



The scoring methodology was applied to the 16 projects using ratings from 1 (weak) to 4 (strong) performance against the criteria. Appendix 3 details the scoring for each of the 12 subcriteria in the project prioritization.

Weights applied to the four criteria groups were:

- climate change/environment: 30%
- economic: 20%
- social: 30%
- project sustainability: 20%

Prioritization, conducted by the Ministry of Finance, was discussed in detail with senior officials of line ministries on 29 July 2020 and the draft was presented in August 2020 at a workshop of infrastructure sector stakeholders for review and finalization.

At this stage, all projects are in early stages of preparation, and information on costs and benefits is limited. Absent an economic cost/benefit analysis, a simple return on marginal capital approach has been applied. Following ADB rates,⁴ a minimum acceptable return of 9% a year for economic infrastructure and 6% for social and climate adaptation projects has been used. These rates have been applied to the estimated capital cost to calculate the minimum acceptable annual net economic return required for the project to be considered viable. An assessment has then been made of whether net economic benefits of this magnitude can be identified or achieved, which provides an indicator of the project's likely economic viability.

Full feasibility studies will be required for all priority projects to assess and confirm their technical, economic, financial, environmental, and safeguard viability and soundness.

3.3 Priority Infrastructure Projects

The Government of Tuvalu assessed projects in terms of adaptation to climate change, economic, social, and sustainability criteria. Projects that scored 70% or more are considered the highest priority. All the priority projects are presented below, by category. Project profiles are in Appendix 4.

3.3.1 Climate adaptation infrastructure

The need to address climate change impact on Tuvalu is the government's highest priority, as it seeks to develop infrastructure projects that will protect the country and the population against, particularly the significant flooding, which has already starting to occur. The large ongoing project—the Tuvalu Coastal Adaptation Project—financed by the Green Climate Fund and approved in 2017 for A\$52 million seeks to fortify the coastline against climate change impacts. The government is also looking beyond this important project to adapt to climate change.

⁴ ADB Guidelines for Economic Analysis of Projects.

The National Adaptation and Reclamation Project scored highest on all prioritization criteria. It is considered the ultimate solution to climate adaptation, and would safeguard Tuvalu’s territory, its economy, and its way of life. It envisages land reclamation and relocation to that land. The project would involve a massive investment estimated in the hundreds of millions of dollars, many times Tuvalu’s gross domestic product, making it challenging to justify in economic terms, although this cannot be the only measure of benefits.



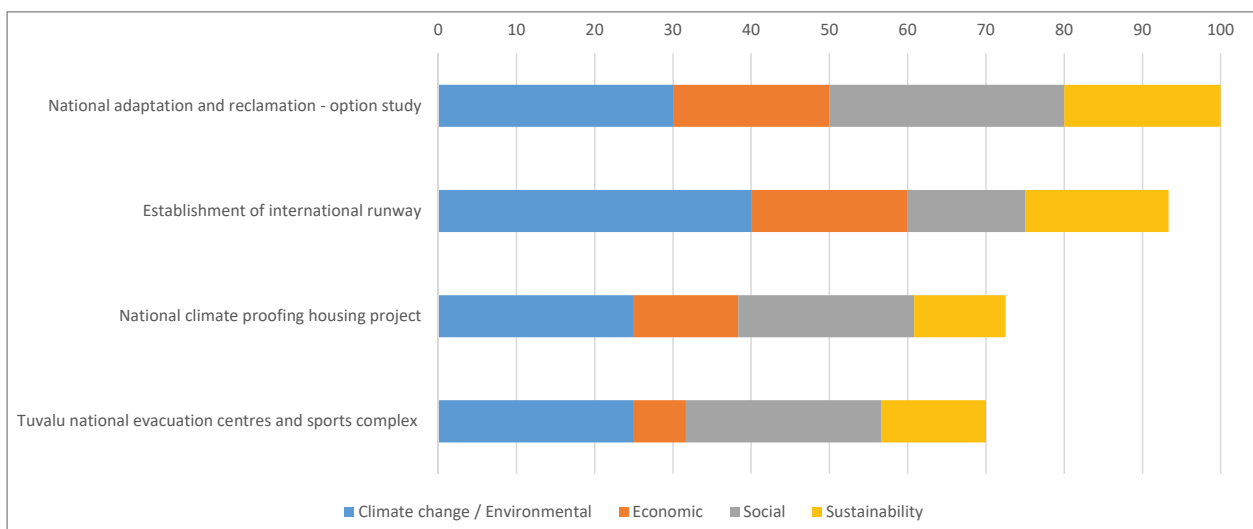
The economic and societal costs of doing nothing is considered far greater than the cost of the National Adaptation and Reclamation project. To properly assess and advance such a large project, the government will proceed first with an options study to consider climate change impact scenarios for 25, 50, 75, and 100 years. It will then develop adaptation options and strategies and identify the best way forward and when drastic safeguard measures would need to be taken. It will do detailed cost estimates and fully assess technical, economic, social, cultural and environmental feasibility. The study will include options for the establishment of

the international airport on reclaimed land, as the current airport risks falling below sea level. An amount of \$5 million has been budgeted for the Options Study in the Infrastructure Plan and is considered the highest priority given the existential nature of the project for the country.

The Options Study and adaptation to climate change infrastructure projects total A\$153.6 million.

The results of the scoring and prioritization process is presented in Figure 1 below.

Figure 1: Prioritization of Climate Adaptation Infrastructure Projects



The climate adaptation infrastructure projects assessed include the relocation of the international runway, climate proofing houses nationally, and establishment of national sport facilities that will be deployed as evacuation centers. The international runway and the housing projects were assessed as having potential economic viability to meet a minimum economic return of 6% a year. The evacuation center and sports complex may be economically viable, depending on the societal benefits of health and safety, which would be identified during the feasibility study. Table 2 briefly reviews the analysis.

Table 2: Overview of the Analysis

Priority	Project Name	Estimated Capital Cost (A\$ million)	Prioritization Criteria				Likely Economic Viability	
			Climate	Economic	Social	Sustainability	Minimum net economic return per year (A\$)	Likely viability
High	Establishment of international runway	\$40	High	Medium	Medium	Medium	\$2.40 million	Potentially
							\$228 per capita	
High	National climate proofing housing project	\$28.6	High	Medium	Medium	Medium	\$1.72 million, \$163 per capita	Potentially
High	Tuvalu national evacuation centres	\$80	Neutral	Low	Medium	Medium	\$4.8 million,	Maybe
							\$457 per capita	

3.3.2 Economic infrastructure

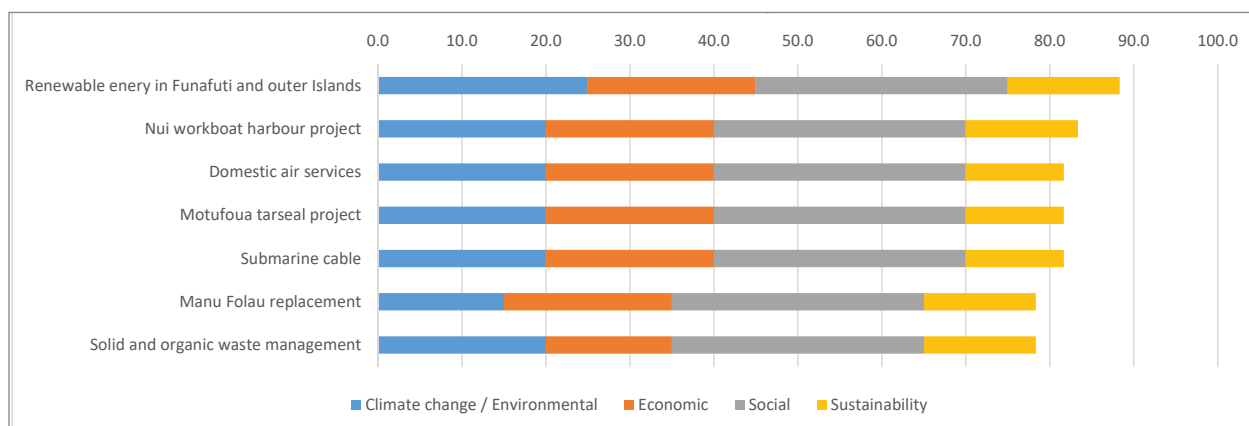
The economic infrastructure sectors included in the Infrastructure Plan are maritime, air and road transport, energy, telecommunications, water supply and waste management. Priority projects total A\$127.5 million over 5 years.

Economic infrastructure projects generally scored higher than other projects due to their impact on economic growth and job creation. This is particularly beneficial given the COVID-19 pandemic and the need for economic recovery.

Economic infrastructure projects were rated neutral on climate change and environment, and high for economic and social criteria, given their impact on economic growth and improvement in social services. The assessment rated the projects “medium” for project sustainability criteria. Figure 2 presents results of the scoring and prioritization.



Figure 2: Prioritization of Economic Infrastructure Projects



The economic infrastructure projects were all assessed as having potential to meet a minimum economic return of 9% a year.

Table 3: Overview of the Analysis

Priority	Project name	Estimated Capital Cost (A\$ million)	Prioritization criteria				Likely Economic Viability	
			Climate	Economic	Social	Sustainability	Minimum net economic return (A\$ per year)	Likely viability
High	Renewable energy in Funafuti and outer islands	\$4.5	High	High	High	Medium	\$0.41 mln	Potentially
							\$39 per capita	
High	Nui workboat harbour project	\$20.0	Neutral	High	High	Medium	\$1.80 mln	Potentially
							\$171 per capita	
High	Domestic air service	\$20.0	Neutral	High	High	Medium	\$1.80 mln	Potentially
							\$171 per capita	
High	Motu Foua tarseal project	\$25.0	Neutral	High	High	Medium	\$2.25 mln	Potentially
							\$214 per capita	

High	Submarine cable	\$42.0	Neutral	High	High	Medium	\$3.78 mln	Potentially
							360 per capita	
High	Manu Folau vessel replacement	\$15.0	Neutral	High	High	Medium	\$1.35 mln	Potentially
							\$128 per capita	
High	Solid and organic waste management	\$1	Neutral	High	High	Medium	\$0.09 mln	Potentially
							\$9 per capita	

Air connectivity is essential for Tuvalu and while not included in the above prioritization as funds are already available, the government is assessing options for the rehabilitation of the current airport, which would be financed with the assistance of the World Bank under its ongoing Aviation Project.

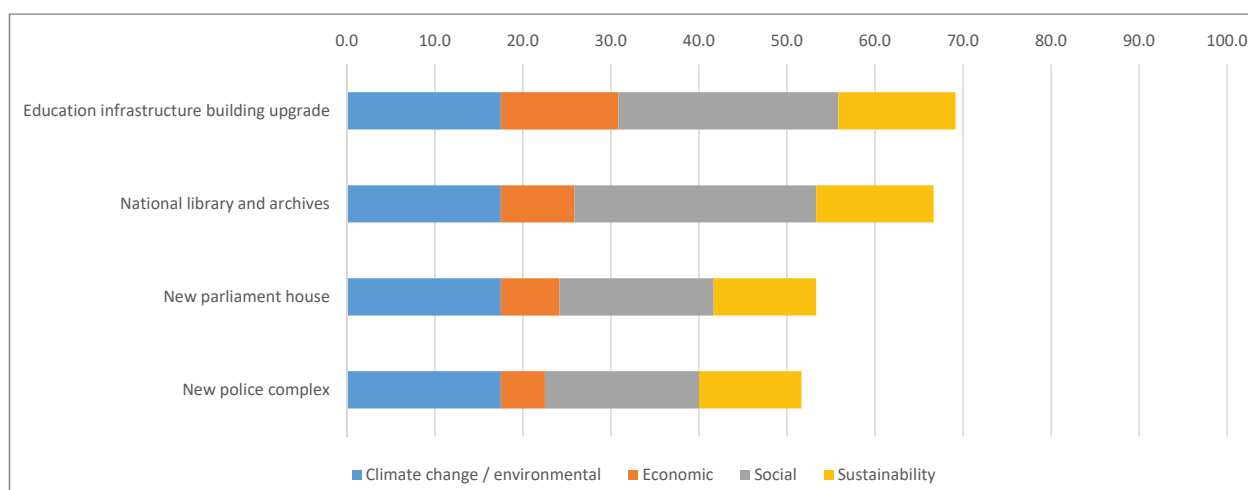
3.3.3 Government and social infrastructure

Four social infrastructure projects totaling A\$28.4 million were considered.

Buildings scored neutral for climate change and environment, low in economic impact, medium in social impact, and medium for project sustainability. Buildings for education score higher as they would contribute to job creation and economic growth and are considered potentially economically viable.

Figure 3 presents results of the scoring and prioritization.

Figure 3: Prioritization of Government and Social Infrastructure Projects



The buildings were assessed as maybe meeting a minimum economic return of 6% a year, except for the education facilities, which were assessed as potentially viable.

Table 4 provides an overview of the analysis.

Table 4: Overview of the Analysis

Priority	Project Name	Estimated Capital Cost (A\$ million)	Prioritization Criteria				Likely Economic Viability	
			Climate	Economic	Social	Sustainability	Minimum net economic return A\$ per year	Likely viability
Medium	Education infrastructure building upgrade	\$8.2	Neutral	Low	Medium	Medium	\$0.49mln	Potentially
							\$47 per capita	
Medium	National library and archives	\$10.0	Neutral	Low	Medium	Medium	\$0.60 mln	Maybe
							\$57 per capita	
Low	New parliament house	\$5.4	Neutral	Low	Medium	Medium	\$0.32mln	Maybe
							\$31 per capita	
Low	New police complex	\$4.8	Neutral	Low	Medium	Medium	\$0.29mln	Maybe
							\$27 per capita	

4 Next Steps for High-Priority Projects

The government's Infrastructure Plan includes a high-priority study of A\$5 million and 15 high-priority infrastructure projects totaling A\$246.7 million to be pursued over the next 5 years. Sector ministries and central agencies will consider the Infrastructure Plan in line with their annual budget and central agencies in appraising submissions, helping to improve links between investment planning and annual budgeting.

The next steps will involve seeking donor partner support for the Infrastructure Plan and project preparation activities. The investment projects need to be discussed with donor partners and programmed. Feasibility studies, project costing, cost-benefit analysis, environmental, and social impact assessments and other preparatory work will follow.



The highest priority is to seek support for the Climate Adaptation and Reclamation Project -Options Study and get this important work underway.

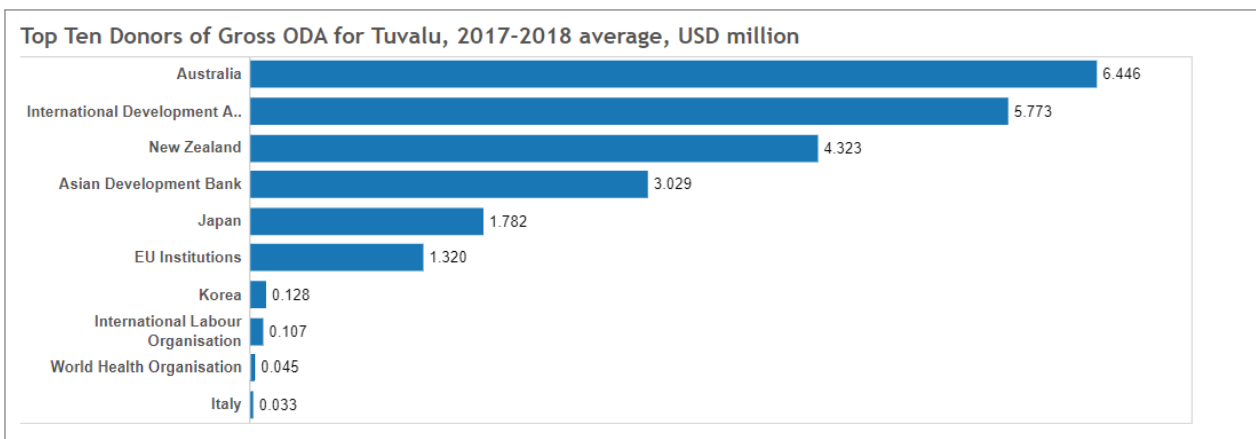
There is a strong opportunity to link the Infrastructure Plan and the budget process with the Asset Management Framework developed in 2017 and described in section 6. This link would establish a more systematic method to identify maintenance requirements and investment needs for replacing, upgrading, and adding capacity to the infrastructure asset inventory. PRIF has agreed to continue its support for infrastructure planning and asset management to help the government advance these activities.

5 Development Assistance

Tuvalu receives assistance from several development partners for infrastructure. Development assistance received in recent years is presented in Appendix 5. According to the OECD-DAC, Tuvalu average official development assistance amounted to \$23.7 million per year 2016–2018.⁵ Figure 4 shows the official development assistance by development partner.

The government’s Infrastructure Plan is expected to provide a sound basis for the government to engage with development partners and to ensure the highest priority projects will be considered for the limited financing available.

Figure 4: Official Development Assistance By Development Partner



⁵ See the Organisation for Economic and Co-operation and Development’s Development Assistance Committee at https://public.tableau.com/views/OECD-DAC-Aid-at-a-glance-by-recipient_new/Recipients?:embed=y&:display_count=yes&:showTabs=y&:toolbar=no?&:showVizHome=no, as of 14 September 2020

6 Asset Management



The implementation of the government’s Infrastructure Plan needs to consider proper asset management and maintenance.

Inadequate infrastructure maintenance has long been recognized as a challenge for governments. Failure to maintain infrastructure leads to premature deterioration and is a particular issue for small island developing states in the Pacific. Tuvalu needs to avoid the common “build-neglect-rebuild” cycle, where infrastructure is built, there is no maintenance, and the asset is neglected and then it needs to be rebuilt.⁶

The Government of Tuvalu, with PRIF support, developed an asset register for all major assets in the country as of 2017. The register covers all physical infrastructure assets valued at \$10,000 or more and owned by the government, local authority (Kaupule) and/or major public sector enterprises in the nation, including electricity, water supply,

sanitation, transport (roads, maritime, air), ICT, buildings and other major infrastructure. The register contains asset replacement costs, depreciation estimates, and annual maintenance cost requirements, among other critical information for planning and finance. Additionally, it includes assessments for asset condition, climate change vulnerability, and resilience. In 2017, the cabinet endorsed the Tuvalu Asset Management Framework.

The asset register is useful for identifying major assets in poor condition and in need of rehabilitation and/or replacement. The government’s priority infrastructure program includes the replacement of the Manu Folau passenger boat and the rehabilitation and upgrade of the police building, which were both identified in the asset register as in poor condition.

The asset register is also a tool for budgeting annual maintenance requirements. The Tuvalu Special Infrastructure Fund includes the Deferred Maintenance Fund, with A\$500,000 allocated to maintenance. This year, A\$48,000 was spent in major infrastructure maintenance, mainly for the Government Building.

6 PRIF Build-Neglect-rebuild report 2013.

In 2019, the government spent A\$6,000 in maintenance. It is strongly recommended to maintain the asset register and use the data to develop a 10-year maintenance plan for major public assets that will inform budgeting and allocations for the maintenance fund.

The indicative maintenance requirements for the government’s priority infrastructure program is estimated at just over A\$6 million per year (Figure 6), based on an indicative annual maintenance cost of 2% of the capital cost. While the actual maintenance cost expressed as a percentage of project capital cost are expected to vary for different projects over a broader range of 1% to 5%, there is insufficient information at this time to allow accurate estimates of maintenance costs. The National Adaptation and Reclamation project has not been assessed.

Figure 5: Maintenance Implications of High-Priority Projects

Project Name	Estimated Cost (A\$ million)	Annual Maintenance Requirements (A\$ million)
Establishment of International Runway	40	0.8
Tuvalu National Evacuation Centre	80	1.6
National Climate Proofing Housing Project	28.9	0.578
Renewable energy in Funafuti and Outer Islands	4.5	0.09
Nui Workboat Harbour Project	20	0.4
Domestic Air Service	20	0.4
Motufoua Tarseal Project	25	0.5
Submarine Cable	42	0.84
Manu Folau Replacement	15	0.3
Solid and Organic Waste Management	1	0.02
Education Infrastructure Building Upgrade	8.2	0.164
National Library and Archives	10	0.2
New Parliament house	5.4	0.108
New Police complex	4.8	0.096
Total Annual Maintenance Required		6.1 million/year

7 Conclusion

The Tuvalu Priority Infrastructure Investment Plan 2020–2025 has been prepared to guide public investment planning and budgeting and to showcase the government’s infrastructure priorities for development partner support.

Of highest priority is climate change and the existential concerns of Tuvaluans caused by the prospects of sea-level rise. To address the challenge, the government is proposing the flagship “National Adaptation and Land Reclamation Project”. The government proposes a pragmatic and methodical approach to pursuing this ambitious project through an Options Study which will consider climate change impact scenarios, develop adaptation options and strategies for Tuvalu, and identify the best way forward and fully assess the technical, economic, social, cultural, and environmental feasibility.

Ensuring international connectivity by air is Tuvalu’s second highest priority. The government is considering two approaches: building a new airport on reclaimed land (which depends on the National Adaptation and Reclamation project) and rehabilitating and climate proofing the current airport so it remains safe and operational for as long as possible.

The priority Infrastructure Plan also presents other high priority economic infrastructure including projects for energy access and security, other transport connectivity, information and communication technology, and solid waste management. It also has identified medium priority social infrastructure in the form of educational and civic buildings.

The government recognizes that proper maintenance of infrastructure is essential and has recently introduced an asset management framework and will consider increasing budgets for maintenance for both existing and new infrastructure.

The government seeks development partner support for its ambitious Infrastructure Plan 2020–2025 to support the long-term economic and social well-being and future of the people of Tuvalu.

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Appendix 1: Tuvalu Infrastructure Strategy and Investment Plan 2016 Implementation

TISIP 2016 identified 12 high-priority projects. Currently (as of September 2020), four major projects are completed, six are ongoing and two have not progressed, including the upgrading of container storage and handling facilities and the development of three water reserves on each island.

Therefore, from 2016 to 2020, the Tuvalu Government advanced 83% of the projects identified as high priority in TISIP 2016. Status of the priority projects is presented in Figure A11.

Figure A1.1: Status of 12 High-Priority Projects in the Tuvalu Infrastructure Strategy and Investment Plan 2016

Project	Completed	Ongoing*	No Progress
Telecommunications			
Further upgrades to satellite-based mobile and internet services on Funafuti and Outer Islands			
Transport–Land			
Periodic maintenance: reseal of Funafuti roads			
Transport–Aviation			
Periodic maintenance: reseal of Funafuti International Airport runway			
Transport–Maritime			
Upgrade of container storage and handling facilities			
Water Supply and Sanitation			
Development of three water reserves on each island			
Solid Waste Management			
Improvements to solid waste management on all islands: landfills, equipment (including that required for pumping out septic tanks)			
Energy			
Additional investment in renewable energy beyond World Bank project			
Solar photovoltaic systems: battery replacement			
Coastal Protection			
Nukufetau coastal protection			
Coastal protection infrastructure for three islands (Funafuti, Nanumea, Nanumaga)			
Health			
Additional funding for mini-hospitals in Nanumea and Vaitupu			
Additional funding for construction of Outer Island clinics			

*Note: Ongoing also means partially completed where a project has several discrete components and one or more is complete

Appendix 2: Consultations

OFFICE OF THE PRIME MINISTER		
Role in the Tuvalu Infrastructure Strategy and Investment Plan Review	Position	Name
Headquarters		
National Infrastructure Steering Committee (NISC) Member	Prime Minister	Hon. Kausea Natano
Lands and Survey Department		
NISC Member and Sub-Committee Member	Director	Faatasi Malologa
Subcommittee Member	Senior Staff	Pasai Andrew
Human Resources Department		
Development Cooperation Committee (DCC) Member	Deputy Secretary/Ag. Sec of Office of the Prime Minister	Lily Tagisia Faavae
MINISTRY OF FINANCE		
Headquarters		
Co-Chair of NISC	Minister of Finance	Hon. Seve Paeniu
DCC Member, consultation participant and NISC member	Chief Executive Officer	Faiva Lee Moresi
Consultation participant and NISC member	Deputy Secretary	Niuatui Niuatui
Consultation participant	Acting Assistant Secretary	Pepetua Latasi
Consultation participant	Adaptation Officer	Litiana Talake
Consultation participant	Project Development Officer	Loloma Homasi
Inland Revenue and Tax Department		
Consultation participant	Director	Sania Teisini
Planning, Budget and Aid Coordination Department		
Facilitator	Acting Director	Savali Matio
Facilitator	Acting Senior Aid Adviser	Silaati Filiake
Facilitator	Acting Senior Economic Adviser	Alimau Pugameau
Facilitator	Sector Specialist	Mataliki Enesi
Facilitator	Sector Specialist	Penivao Matealofa
Facilitator	Sector Specialist	Talake Teo
Facilitator	Sector Specialist	Tinaraoi Toafa

ADB Country Representative		
Co-opted Member of NISC	Liaison Officer	Letasi Iulai
Monitoring and Evaluation Unit		
Consultation Member	Monitoring and Evaluation Officer	Lakera Vavau
Treasury Department		
Consultation Member	Office and Administrative Manager	Emelisa Tuilagi
MINISTRY OF JUSTICE, COMMUNICATION AND FOREIGN AFFAIRS (MJCFA)		
Judiciary		
consultation participant	Magistrate Clerk	Timaima Polevia
Judiciary officer	Judiciary officer	Bernard Ewekia
ICT Department		
Consultation Participant	Director	Opeta Simati
Telecom		
Consultation Participant	Senior Telecom Officer	Anisi Penitusi
Foreign Affairs Department		
Consultation Participant	Chief Protocol Officer	Mahu Tinapa
Consultation Participant	Senior Adviser	Savali Fatoga
Consultation Participant	Protocol Officer	Falata Kilisi
Consultation Participant	Deputy Secretary/Acting Chief Executive Officer	Pasuna Tuaga
Police		
Consultation Participant and DCC Member	Ag. Commissioner of Police	Amuia Aligi
Attorney General		
Consultation Participant	Crown Counsel	Melisa Ako
Consultation Participant	Crown Counsel	Lisepa Paeniu
Consultation Participant	Higher Executive Officer	Malia Saumanaia
MINISTRY OF EDUCATION, YOUTH AND SPORTS		
Headquarters		
NISC Member	Minister	Hon. Timi Melei
Consultation Participant and DCC Member	CEO	Dr. Tufoua Panapa
Consultation Participant	Sports Officer	Talafai Mono

Education Department		
Consultation Participant	Senior ICT Officer	Alapati Taupo
MINISTRY OF HEALTH, SOCIAL WELFARE AND GENDER AFFAIRS (MOHSWGA)		
Headquarters		
NISC Member	Minister	Hon. Minister Taape
DCC Member	Ag. Chief Executive Officer	Dr. Kepa Taniela Siose
Gender Department		
Consultation Participant	Policy Advocacy Coordinator	Sokotia Kulene
Consultation Participant	Gender Officer	Salesa Falesene
Health Department		
Consultation Participant	Ag. Director of Health	Dr. Katalina Filipo
Social Welfare		
Consultation Participant	Community Officer	Maho Homasi
MINISTRY OF FISHERIES AND TRADE (MFT)		
Headquarters		
NISC Member	Minister	Hon. Minute Taupo
Consultation Participant and DCC Member	Ag. Chief Executive Officer	Falasese Tupau
Fisheries Department		
Consultation Participant	Fisheries Economist	Tala Simeti
MINISTRY OF LOCAL GOVERNMENT AND AGRICULTURE		
Headquarters		
NISC Member	Minister	Hon Katepu Laoi
Rural Development Department		
Consultation Participant	Acting Director	Suiti Faavae
Consultation Participant	Project Development Officer	Maryanne Vunisiriti
Funafuti Kaupule/Island Council		
Consultation Participant	Kaupule Planner	Palutu Laupepa
Consultation Participant	Representative from Kaupule	Teitmani Lauti
Consultation Participant	Representative from Kaupule	Teleke Lauti
Consultation Participant	Treasurer	Tutonu S Bruce
Consultation Participant	Representative from Kaupule	Polau Kofe

MINISTRY OF TRANSPORT ENERGY AND TOURISM		
Headquarters		
NISC Member	Minister	Hon. Nielu Mesake
NISC Member and DCC Member	Chief Executive Officer	Avafoa Irata
Consultation Participant	Assistant Secretary	Asela Peneueta
Energy Department		
Consultation Participant	Energy Officer	Simona Kilei
Marine Department		
Consultation Participant	Marine Captain	Leupena Paueli
Major Projects		
Consultation Participant	Outer Island Maritime Infrastructure Project Coordinator	Vete Sakaio
Consultation Participant	Maritime Infrastructure Climate Resilient Operation Coordinator	Siulai Elisala
Consultation Participant	FASNETT Project Coordinator	Sulifaiga Uota
Consultation Participant	TVAIP Finance Officer	Enalisa Kaufakatasi
Tuvalu Electricity Corporation		
Consultation Participant	Senior Staff	Alafou Silo
MINISTRY OF PUBLIC WORKS, INFRASTRUCTURE, LABOUR, METEOROLOGY AND DISASTER		
Headquarters		
Co-Chair of NISC and Chair of the Subcommittee	Minister	Hon. Ampelosa Tehulu
NISC Member and DCC Member	Ag. Chief Executive Officer	Palipa Lauti
Public Works Department		
Consultation Participant, NISC Member, subcommittee member and DCC Member	Director	Malofou Sopoaga
Consultation Participant	Public Works Department Civil Engineer	Lekai Sakaio
Consultation Participant	Ag. Deputy Director	Pisi Seleganiu
Consultation Participant	Architect	Charles Leepo
Consultation Participant	Civil Engineer	Tekita Neemia
Consultation Participant	Director	Malofou Sopoaga
Consultation Participant	Housing Officer	Gunter Koepke

Consultation Participant	Public Works Department Civil Engineer	Simon Tuilagi
Consultation Participant	Public Works Department Electrician	Taukiei Lesaa
Meteorology		
Consultant Participant	Forecast Scientific Officer	Tavau Vaaia Simeona
Consultant Participant	Data and Communication Officer	Richard Gokrun
Environment		
Consultant Participant	Director	Soseala Tinilau
Consultant Participant	Ridge to Ridge Project—Support Officer	Kilateli Epu

Appendix 3: Prioritization and Scoring Notes

Prioritization Criteria	Range of Scores	Notes on Scoring
1. Climate Change/Environmental		
<p><i>a. Resilience of the asset</i> How resilient is the asset to the potential effects of climate variability, climate change, and natural hazards?</p>	1 2 3 4	<p>Asset has low resilience. Asset has some resilience. Asset has moderate resilience. Asset has high resilience.</p> <p><i># resilience in this context relates to the level of risk (associated with the potential effects of climate variability, climate change, and natural hazards) to the delivery of the services the asset is intended to deliver over its design life—low risk equates to high resilience.</i></p>
<p><i>b. Disaster risk management or climate change adaptation function</i> Does the project have specific objectives or components related to disaster risk management or climate change adaptation for the broader community?</p>	1 2 3 4	<p>No adaptation function. Low level of adaptation function. Moderate level of adaptation function. High level of adaptation function.</p> <p><i># an adaptation function in this context is a specific design objective addressing disaster risk management or climate change adaptation for the broader community.</i></p>
<p><i>c. Impact on the environment</i> Will the project have positive, neutral or negative impacts on the environment e.g. land, coastal and marine environments, water resources?</p>	1 2 3 4	<p>High negative impact on the environment. Some negative impact on the environment. Some positive impact on the environment. High positive impact on the environment.</p>
2. Economic		
<p><i>a. Impact on costs and efficiency of infrastructure users</i> Will the project result in lower costs for infrastructure users through lower tariffs or slower growth in tariffs, time savings, reduced operating costs?</p>	1 2 3 4	<p>No positive impact on costs and efficiency of infrastructure users. Low positive impact on costs and efficiency of infrastructure users. Moderate positive impact on costs and efficiency of infrastructure users. High positive impact on costs and efficiency of infrastructure users.</p>

Prioritization Criteria	Range of Scores	Notes on Scoring
<p><i>b. Impact on economic growth and employment</i> Will the project facilitate expansion of industries e.g. fisheries, agriculture, wholesale and retail, tourism?</p>	1 2 3 4	No positive impact on economic growth. Low positive impact on economic growth. Moderate positive impact on economic growth. High positive impact on economic growth.
<p><i>c. Maintenance of essential services</i> —Is the project critical to maintaining essential economic infrastructure services?</p>	1 2 3 4	No impact on maintaining essential economic infrastructure services. Low impact on maintaining essential economic infrastructure services. Moderate impact on maintaining essential economic infrastructure services. High impact on maintaining essential economic infrastructure services.
3. Social		
<p><i>a. Improved social services</i> Will the project facilitate improvements in the delivery of health and/or education services?</p>	1 2 3 4	No positive impact on delivery of social services. Low positive impact on delivery of social services. Moderate positive impact on delivery of social services. High positive impact on delivery of social services.
<p><i>b. Service coverage</i> Will the project extend social service coverage to new areas and/or more people, or prevent loss of coverage?</p>	1 2 3 4	No extension of social service coverage. Minor extension of social service coverage. Moderate extension of social service coverage. Major extension of social service coverage.
<p><i>c. Other social benefits</i> Will the project have other social benefits for the community e.g. improving the lives of women and children, assisting vulnerable/disadvantaged groups, alleviating poverty, responding to rural/urban drift, improved safety?</p>	1 2 3 4	No other social benefits. Low level of other social benefits. Moderate level of other social benefits. High level of other social benefits.

Prioritization Criteria	Range of Scores	Notes on Scoring
4. Project Sustainability		
<p><i>a. Financial</i> Will the project be able to support the ongoing costs of operation and maintenance through user charges etc.?</p>	1 2 3 4	<p>No capacity to meet operations and maintenance costs (<10%).</p> <p>Low capacity to meet O&M costs (10% to 49%).</p> <p>Moderate capacity to meet O&M costs (50% to 80%).</p> <p>High capacity to meet O&M costs (>80%).</p>
<p><i>b. Technical</i> Will the technology used in the project be appropriate, and able to be operated and maintained?</p>	1 2 3 4	<p>Technology not appropriate.</p> <p>Significant issues with appropriateness of technology.</p> <p>Minor issues with appropriateness of technology.</p> <p>No issues with appropriateness of technology.</p>
<p><i>c. Institutional</i> Will the institution responsible for the project have sufficient capacity for implementation, operation and maintenance?</p>	1 2 3 4	<p>Very weak institutional capacity.</p> <p>Low level of institutional capacity.</p> <p>Moderate level of institutional capacity.</p> <p>High level of institutional capacity.</p>

Appendix 4: Project Profiles of Priority Projects

Project title
National Adaptation Land Reclamation & Coastal Protection – Option Study
Location:
Funafuti, Lagoon side
Responsible Agency:
Ministry of Finance
Project Description:
Option Study for a National Adaptation Land Reclamation and Coastal Protection, which would consist of reclamation from Papaelise, Fatato to Fongale then to Amataku. Funafuti is the capital of Tuvalu where 60% of the population resides. Recent studies such as LIDAR have shown that Funafuti atoll will be under water in 100 years, with the runway already being below sea level. The vision of the government is to relocate the runway to the lagoon side on reclaimed land. The project also includes relocating commercial, agricultural, residential and government infrastructure to the reclaimed land.
Links with TKIII Strategic Areas:
This project links with Strategic Area 1 of TKIII: Climate Change with a goal of protecting Tuvalu from the impacts of climate change

Links with Corporate Plan or Sector Plan:
This project links with Te Kaniva, Tuvalu Climate Change Policy, 2012: Charting Tuvalu through the challenges of climate change.
Planned Implementation Period:
Start: 2021 End: 2023 (planning finalised) End of the reclamation – To be confirmed once the plan is ready
Project Cost:
The cost of the existing reclamation land area: 270 m long x 100 m wide created by dredging in 2015. The dredging cost estimates for beach replenishments in Funafuti were A\$1.4 million for 70,000 cubic meters sand or A\$20/cubic meter of A\$1.4 m / 270 m = A\$5,185/m of beach designed for 10% loss each year at Hs 1.5m. Geosynthetic bags: Groynes: 2,400 bags/100 m groyne x 2 groynes x 2 cubic meter x \$20/cubic meter = \$711/m Offshore breakwater = $(6,480 * 20 * 2) / 270 = A\$960/m$ Total bags: \$1,671/. The same concept was used to estimate the full reclamation, which adds to: Option Study: A\$5m Estimated capital cost: A\$3b- full reclamation, dredging, heavy equipment, etc
Project Benefit:
More resilient and secure communities, with assets in all social and economic sectors better protected. There will be a significant boom to the economy given all the major developments will be allocated on this reclaimed land such as the international runway. More tourists will be coming in, more employment opportunities will be deriving in which added significantly to the economy. 60% of the Tuvalu population is residing here in Funafuti, Capital of Tuvalu.
Project Status (underline):
Concept note
Funding Source (underline):
Capital: To seek development partners assistance Maintenance: Government of Tuvalu/co-financing with development partner
Climate Change/Disaster Risk Management:
This is one measure of climate resilience and reducing the vulnerability to the effects of climate change. Climate proofing necessary: These geo techs bags are climate resilient and assist the islands in the longer term to reduce soil erosion and protect from inundation. Even with the reclamation itself is a climate change/disaster measure to minimize its risk.

Project title

Establishment of a New International Airport

Location:

Funafuti, Tuvalu

Responsible Agency:

Ministry of Public Utilities and Infrastructure

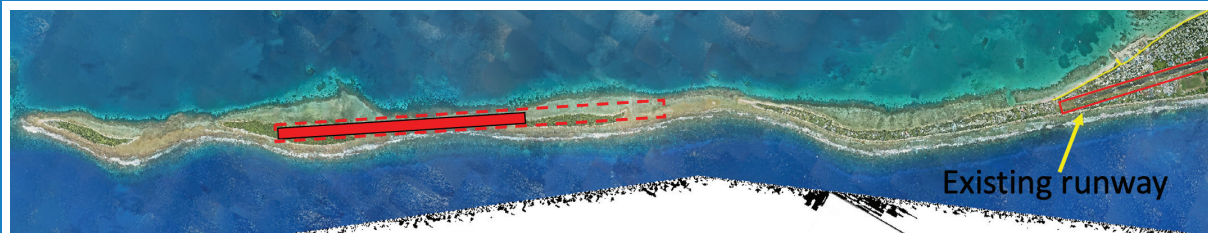
Project Description:

The establishment of the international runway at the Southern end of the island is one of the key projects outlined in the Government Four years Roadmap. Recent survey by Lidar confirmed that the current runway is below the sea level and predicts to be submerged in 100 years' time. The government anticipates to develop a land reclamation at the southern end of the island and once is completed, the construction of the International runway will be started. This project is proposed to be implemented on a phase by phase basis:

Phase 1: Feasibility Study

Phase 2: Land reclamation

Phase 3: Construction of the New International Runway.



- FOREST / WETLAND / WATER QUALITY PLANTING
- MIXED RESIDENTIAL / TOURIST ACCOMMODATION
- POTENTIAL SEWAGE TREATMENT PLANT
- GOVERNMENT / CIVIL / EDUCATION
- TOWN SQUARE / TOWN CENTRE / MARKET
- AIRPORT PRECINCT
- AIRPORT (20% CAPABILITY)
- INTERNATIONAL WHARF
- PORT
- INDICATIVE BREAKAWL FOR MARINA



Links with TKIII Strategic Areas:
The project aligns with Strategic Area 9 of TKIII: Infrastructure and Support Services which outlined the needs for improvement in the air services and transportation. It is noted that TKIII supported the feasibility study for the relocation of Airport within Funafuti.
Links with Corporate Plan or Sector Plan:
Aligns with Department of Civil Aviation Strategic Plan 2020- 2024 Government 4-Years Roadmap
Planned Implementation Period:
2023-2028
Project Cost:
Total cost is \$40,000,000
Project Benefits:
<ul style="list-style-type: none"> - Airspace – There is also an opportunity to increase revenues from airspace as most aircrafts would use Tuvalu airspace because of the long-run way. - Building a runway that is capable to handle Boeing 737-700 or even new generations aircraft such as the Boeing Dreamliner (250 seats) and Airbus 350 (366 seats) can increase number of tourists to Tuvalu. Increase in tourist arrivals can also increase Government revenues from room taxes and other taxes such as company taxes applied to hoteliers. There is a potential for domestic and foreign investors to invest in tourism. - The new international runway would increase supply and allow greater competition between airlines. This would give passengers greater choice and put downward pressure on air fares. This mean for the new international runway will mean more flights to main trading partners for Tuvalu such as New Zealand, Australia, Asian countries and other Pacific Island Countries. - The arrival of bigger airplanes can also open up export opportunities for Tuvalu especially in the fisheries sector where fish of high value (e.g tuna) can be exported to international markets such as the US, Japan, New Zealand and Australia. There is also a great potential to export value-added fisheries products such as canned fish and others if proper fisheries infrastructure are built. - Potentially increase investment resulted in the promotion of private sectors and trade. - Creating employment opportunities which can up scaling their standard of living. - Efficient and effective medical referrals to designated hospitals outside of Tuvalu.
Project Status:
Concept note at this stage. Once approved in principle, then the full proposal can be developed and that's where all the documentation and other detailed components will spell out in the content.
Funding Source (underline):
To seek Development Partners' assistance

Climate Change/Disaster Risk Management:			
Threat	Vulnerability	Loss & Damaged	Climate proofing resilience measures
Sea level rise	Salt water intrusion and	Reclamation land for runway can be loss if sea level rises instantly	Higher bases course and sub-base if required at the next repaving
High temperature	Rutting cracks	Higher maintenance cost	More frequent resealing
Storm surges	Wave overtopping	Ponding and potholes	Higher grade asphalt
Cyclone	Safety asset failure	Reduced life of runway	Improved design specification. Regular and frequent inspection and maintenance.
Climate proofing option			
<p>Building materials have to comply with the building code and therefore should be climate proof and resilient. The reclaimed land in which this international runway will be built on will be elevated to escape from the rising in sea level. Proper engineering surveys on assessing the sustainability of the runway will be taken and this will all consider in the designing before construction. Given that it will turn into a major development area, engineers, planning and designers will assess properly and come up with the best climate proofing option for the effective construction.</p>			
Climate Change Threats			
<p>Higher temperature and salt water intrusion Salt water intrusion has been observed with increasing frequency. High temperature can damaged the asphalt seal creating crack.</p>			
Climate proofing resilience measures			
Regular maintenance and resealing			

Project title
Tuvalu National Evacuation Centres and Sport Facilities
Location:
Funafuti and all Outer Islands
Responsible Agency:
Sports Department, Ministry of Education, Youth and Sports
Project Description:
<p>The development of sports facilities such as multi-purpose sports complex/evacuation centre in Funafuti Atoll as well as the establishment of a national stadium. This multi-purpose sport complex is like a gymnasium that has all the sports facilities such as the futsal court, basketball, tennis court, 3 badminton courts and other facility such as special function room/offices, toilets, bathrooms, storeroom and kitchen.</p> <p>This sports complex/evacuation centre will therefore comply with international standards of sports facility. It is therefore an indoor facility that cater for all different sports and at the same time can accommodate people during natural disasters.</p> <p>Another component is the establishment of the national stadium here in Funafuti. Given the importance of sports to promote, maintain fitness and the wellbeing of the citizens of Tuvalu as well as to represent Tuvalu and recognize in international sports events, it is important to establish a well international standard national stadium to raise the standard of sports here in Tuvalu and at the same time able to shelter people in time of disasters.</p> <p>For the outer islands, is it also proposing to establish multi-purpose gymnasiums in all the outer-islands which consist of 8 islands. These are: Nanumea, Nanumaga, Niutao, Nui, Vaitupu, Nukufetau, Nukulaelae and Niulakita. Size of gyms will vary given the size of the island, the size of the site and the number of residents.</p> <p>Thus, both the Sports Complex/Evacuation centre, stadium here in Funafuti and multi-purpose gyms on outer islands had been prioritized by the Tuvalu Government in its 4 year Road Map 2019-2023..</p>
Links with TKIII Strategic Areas:
Education and Human Resources; Infrastructure and Support Services; Health and Social Development.
Links with Corporate Plan or Sector Plan:
It is linked to the sectoral plan of infrastructure and sports.
Planned Implementation Period:
Start: 2021 End: 2025

Project Cost:	
Total Investment: 79,198,577.5	
Construction of outer islands gym - \$7,138,075 per island	
Outer islands Multi-Purpose Gym Budget Breakdown	
Mobilization Phase	\$ 1,992,375.00
Construction Phase	\$ 3,622,500.00
Civil Construction Phase	\$ 1,523,200.00
Total	\$ 7,138,075.00
Funafuti sports complex - \$7,138,075	
National Multi-Purpose Gym Budget Breakdown	
Mobilization Phase	\$ 1,992,375.00
Construction Phase	\$ 3,622,500.00
Civil Construction Phase	\$ 1,523,200.00
Total	\$ 7,138,075.00
Funafuti National Stadium - \$14,955,902,50	
National Stadium Budget Breakdown	
Construct base for athletic track and artificial field	\$ 2,000,000.00
Supply and install athletics track and artificial field inside track	\$ 5,546,800.00
Construct Stadium Building	\$ 4,730,250.00
Flood lighting	\$ 583,200.00
Sub Total: Physical Works	\$ 12,360,250.00
Consultancy allowance	\$ 1,236,025.00
Physical works + Consultancy	\$ 13,596,275.00
Contingency at 10%	\$ 1,359,627.50
Grand Total for the Stadium	\$ 14,955,902.50

Project Benefits:

- Able to cater for various sports events; such as indoor volleyball, indoor basketball, netball, table tennis and other outdoor games that can be organized at the gymnasium compound.
- Provide the fundamental concept to eliminate and to lessen health risks due to weather exposure. Public games and local sports are held at the international runway, exposure to heat and cold (rainy) weather are the risk factors on public health.
- Governmental ceremonies and Ministerial functions may be catered at the gymnasium, other occasions and events can be hosted either indoor or outdoor depending on the space and the capacity of the event.
- Evacuation Centre for the people of Tuvalu if there is a cyclone or strong wind. This is part of an adaptation effort to the effects of climate change.
- Promote fitness and sports in the country. This will enhance various sickness such as NCDs, mental, physical fitness and the overall wellbeing of the people of Tuvalu.
- Able to host regional Pacific games and draw more partners in sports regionally and internationally
- Raising the standard of sports facilities here in Tuvalu as good examples and facilities for the future generations.

Project Status:

Concept note.

Funding Source (underline):

To secure donor funding assistance

Climate Change/Disaster Risk Management:

Climate risk will factor in in the designing of these buildings/facilities to make sure that during catastrophes/disasters, these buildings/facilities are resilient and able to withstand strong cyclones and therefore able to shelter people effectively. This is an adaptation effort to the effects of climate change.

Climate proofing option

Multipurpose gyms/sports complex/evacuation centres in all the islands will comply with the building code and international climate proofing standards thus they are climate resilient and able to withstand strong winds and cyclones. Multipurpose gyms/sports complex/evacuation centres in all the islands will comply with the building code and international climate proofing standards thus they are climate resilient and able to withstand strong winds and cyclones.

Project title
National Climate Proofing Housing
Location:
Funafuti, Tuvalu
Responsible Agency:
Ministry of Public Works, Infrastructure, Environment, Labour, Meteorology & Disaster
Project Description:
The project involves a nationwide climate proofing of households' residences. Given the vulnerability of Tuvalu to the rising in sea level it is crucial to build double storeys for all households. In addition, it provide more safety as well when there is a catastrophe strikes such strong cyclones, winds and storm surge. To date, the total number of households here in Tuvalu is 1837. This include all the 9 islands. This project was therefore identified as one of the priorities in the Government 4-year Road Map in 2019.
Links with TKIII Strategic Areas:
Climate Change as the First Strategic Area in TKIII, with main goals consisting of protecting Tuvalu from the impacts of Climate Change and emphasizing resilience, mitigation, and adaptation.
Links with Corporate Plan or Sector Plan:
Project links with Te Kaniva, Tuvalu Climate Change Policy, 2012: Charting Tuvalu through the challenges of Climate Change and aligns with Infrastructure Corporate Plan.
Planned Implementation Period:
2 – 3 years
Project Cost:
Total budget \$28.6m
Project Benefit:
More safer and secure residence that can stand against Climate Change Effects.
Project Status:
Concept note.
Funding Source (underline):
Seeking Development Partners' Assistance
Climate Change/Disaster Risk Management:
This is 100% climate resilience as people will be protected from strong cyclones. Climate Proofing necessary: Yes

Climate proofing option			
Threat	Impact	Loss and Damage	Resilience Measures
Cyclone	Wind, trees, falling, wave overtopping land	Building, roofs	Building codes enforced, stronger roofs
Storm surge	Flooding, erosion	Foundations, coastling	Elevate houses, building code, land reclamation
Sea level rise	Erosion, seepage	Coastline	Beach nourishment
Temperature	Health, asset failure	Roads, power transformers, generators, cables	Improved design specs, improved ventilation
Climate Change Threats			
Cyclonic winds and associated debris can damage the building; Sea level rise - salt water inundation can create cracks to the foundation of the building; Storm surge; Limited Land space due to corrosion.			
Climate proofing resilience measures			
Improve design specifications hence constructing of a cyclone proofing building.			

Project title
Increase Access to Renewable Energy
Location
All Outer Islands
Responsible Agency
Ministry of Infrastructure
Project Description
The project will increase the renewable energy penetration in the outer islands of Nukufetau, Nukulaelae and Nui from 60% to over 90% and in Funafuti from 16% to 32%, moving the country closer to its target of 100% penetration by 2025.
Links with TKIII strategic areas
Increase renewable energy
Links with corporate plan or sector plan
Renewable energy
Planned implementation period
Start: 2021; End:2023
Project cost
A\$4.5million
Project benefits
Contribute to Tuvalu’s target of 100% electricity supplied by renewable energy means by the year 2025. Provide clean energy access to Tuvaluans
Project status
Concept Stage
Funding source (underline)
Capital: None identified/ GOT/ Public Enterprise/ Development Partner Maintenance: None identified/ GOT/ Kaupule/ Public Enterprise/ Development Partner
Climate Change/Disaster risk management
Climate proofing necessary (underline): Yes/ No
Climate change threats
Cyclone: Frequent number of cyclones, poses a major threat if the building is not climate resilient. Sea level rise and storm surges: No threats

Project Title
Nui Workboat Harbour Project
Location
Nui Island
Responsible Agency
Ministry of Public Works, Infrastructures, Environment, Labour, Meteorology and Disaster (MPWIELMD).
Links with TKIII strategic areas
SA9:Infrastructure & Support Services
Project Description
<p>The whole Project is estimated to cost \$22.2 Million US Dollars and Government of Tuvalu had requested a grant not exceeding \$20 Million, accounting for 90.3% of Project Total Cost; from ADB's Special Funds resources to help finance the project. The Global Environmental Facility (GEF) is NOT providing grant co-financing from its Least Developed Country Fund to be administered by ADB. Government of Tuvalu will finance approximately \$2.2 Million being the remainder of the project costs for land acquisition, counterpart government staff, custom clearance costs, and taxes and duties (waiver). Through this amount, the Government shares of Project total costs is 9.7%</p> <p>The total cost for physical improvements of project with population of approximately 10,507 living on these 9 atoll islands, the Project inevitably carries a high per capital cost. This reflects, in part the significant remoteness premium involved in any investment in Tuvalu because almost all construction materials and equipment have to be transported from outside the country.</p> <p>Still without such investments, communities always run the risk of being increasingly cut-off from the outside world.</p>
Links with corporate plan or sector plan
4 Year Roadmap
Planned implementation period
Start: 2021 End: 2025
Project cost
USD 20 Million

Project benefits

The project will help Tuvalu overcoming connectivity constraints among the capital and outer islands, promoting economic and social developments that is more inclusive and sustainable. The project will improve maritime facilities in outer islands of Nukulaelae, Niutao, Nui and Nanumaga as well as strengthening the Government's capacity in Operation & Maintenance (O&M) and develop a transport sector Master Plan with Tourism, Fisheries, Agriculture and Trade included.

Tuvalu is a tiny nation and its challenges in the transportation sector and economic development comes from its dispersed geography:

- A small country comprising a land area of 26 square kilometers.
- Small and dispersed population of 11,282 as of 2015 with over 6,000 people in Funafuti the capital and the rest are spread in the outer islands.
- Decreasing outer island population due to limited economic opportunities.

These problems are exacerbated by the country's inadequate transportation infrastructure and services:

- Three government-owned ships with a landing craft (Moeiteava) and one visits the islands on every 2-3 weeks or more.
- No outer island has a docking facility except Vaitupu, Nanumea and Nukufetau.
- Passengers and cargo are transferred by small workboats off-shore which is very dangerous especially when sea is rough.
- Workboats still have to go through channels which are still dangerous during bad weathers and sea is rough or too shallow to use during low tide.

On top of these many challenges, Tuvalu faces constant and increasing threats of natural hazards such as tropical cyclones. In March 2015, TC Pam and 17th January, 2020 TC Tino; caused severe floodings and erosions and damages to maritime infrastructures in most of the outer islands to Ramps and channel got silted up at Nukulaelae. The ramp was completely destroyed at Nanumaga and both Nanumaga and Niutao channels were both blocked with boulders and sand.

Project status (underline)

Original Design is being completed by Cardno. However, due to the needs of Government to land the New LCT Barge "Moeiteava" into these project, the design team are reviewing the Design and working on incorporations of Additional Designs features to accommodate and addressing this need of Government.

It is anticipated that a full MCA Report shall be made ready by the Design Team for Government's review and acceptance at the end of this year 2020.

Funding source (underline)

Development Partner: – ASIAN DEVELOPMENT BANK (ADB)

Operation & Maintenance: – GOVERNMENT OF TUVALU (GOT)

Climate Change/Disaster risk management

Climate proofing necessary : Yes, needs to be climate proof to withstand strong cyclones and resilient at least surviving a minimum of 50 years



Climate Change Threats

Cyclone: Cyclone is a devastated climatic event that occur quite frequent in Tuvalu. Therefore, it is important that this project is able to withstand these climatic events.

Sea level rise: Sea level rise is an on-going issue currently faced by all people and islands of Tuvalu. Therefore, the new Infrastructure should be built in order to address risks from sea level rise.

Climate Proofing Resilience Measures

Climate proofing measures can include building a structure that can withstand devastated impacts from cyclones of category 5.

The foundation profile should be strongly anchored into the reef flat and levels are correctly set to suit the functionality of the built structures.

The Design of the Infrastructure should comply strictly to all the requirements of Design Code use and Contractor selection is critical to the quality delivery of the infrastructure and should adhere strictly to the requirements of ADB Procurements.

Project Title:
Establishment of the domestic air services within the islands of Tuvalu (Domestically)
Location:
Domestically- within the islands of Tuvalu
Responsible Agency:
Ministry of Transport, Energy and Tourism
Links with TKIII Strategic Areas:
Links to goal 9 of TKIII: Infrastructure and Support Services. Goal: Provide efficient, high quality infrastructure and support services.
Links with Corporate Plan or Sector Plan:
Links with sectoral plan, TISIP and the Ministry (MTET's corporate plan)
Planned Implementation Period:
2020 - 2025
Project Cost:
Total Cost - \$20,150,000 Year 1 2020 - Feasibility Study and Scoping-80,000 Year 2 2021 - Conceptual design- \$50,00 Year 3 2022 - Clearing of land and construction of the runway- 20,000 Year 4 2023 - Establishment of the Enterprise itself- \$1,000,000 Year 5 2024 - Procurement, other preparatory works and commencing Services-\$20,000,000
Project Benefit:
Currently, according to the 'Tuvalu Population and Housing Mini-Census 2017 Report', the national population is 10,645. The inhabitants in Funafuti is 6,716 and the outer-islands is 3,929. There is most likely that 60-90% of the population will directly and indirectly benefit for establishment of the domestic air services. This initiative will drive a lot of benefits to the country. There will be expected multiplier effects on the economy propelled by incremental growth that can be derived from expanded business opportunities, infrastructure development (tourism accommodation, dining, transportation, cultural attractions enhancing employment opportunities and so forth. Affordable domestic air services will allow much greater movement of people, goods and services inter-island. These can create islands' own economic and social multiplier effects. Tourism initiatives that are suitable for local population in the outer-islands and general domestic air travel.
Benefits: 1. Tourism
The establishment of domestic air services will attract more tourists given the efficiency to travel from one island to another. In addition, a reduction in the airfares from Fiji to Tuvalu and vice versa needs to re-look at to attract more tourists to Tuvalu. This can be in the longer term but for now, it needs to establish an efficient domestic air services that is more reliable and able to meet the needs of the

people on a timely manner. The majority of the population sits in the age range of 15-59 which is 6,149 in total. This of course will give hope and opportunities for youth, school drop outs and even adults in the 50s and 60s.

2. Employment

With employment generation, more opportunities will be created for graduates in the field of aviation and other sectors such as tourism, agriculture and business. Even at the community level, people will tend to generate income by selling their produce to tourists. In addition, more citizens will be employed in accommodations, will boost the fishing industry as well as getting money through home stay services

3. Diversification of the Economy

The diversification of the economy will spread out to other sectors such as agriculture. Communities tend to plant more of their local produce to sell to tourists and earn money. According to “Te Kakeega III”, airline service could have multiplier effects on the economy, as a result of higher tourist arrivals.⁷ This can boost and revive the knowledge of making handicrafts and Tuvalu tradition to showcase to the tourists, it will assist the fishing sector by turning into a commercialised industry where more people can be employed in the processing of the fish, packaging as well as the initial stage, that is fishing.

4. Decentralization of services

With the establishment of domestic air service, there will be a reduction in the number of young people drifting to the urban area. People will be attracted at some point to stay on their own island communities and find employment because of existing opportunities created by the domestic air service. 40 percent of the population (3,939) is in the outer islands that can benefit from employment. This is because some of the services like tourism, air services are existed as well in the outer islands as will derived from this initiative.

Project Status (underline):

Concept note

Funding Source (underline):

This proposal is seeking funding assistance from development Partners

Climate Change/Disaster Risk Management:

This project will provide resilience to climate change and disasters in a way that it will enhance efficiency to transport the passengers in times of disasters.

Climate change threats

Rising sea level, tropical cyclones, storm surge.

Climate proofing

The planes will build in a way that is climate resilient so it’s sustain in the longer term and minimize costs to the government.

⁷ Te Kakeega iii, 2016-2020

Project Title:
Motu Foua Tarseal Road
Location:
Vaitupu
Responsible Agency:
Ministry of Public Works, Infrastructure, Environment, Labour, Meteorology and Disaster
Project Description:
This project aims to improve the movement of transportation in Vaitupu by building a tarseal road from the central district all the way to Motufoua Secondary School. Vaitupu is the second highest densely populated island in Tuvalu and therefore it is a highly need to get the roads tarsealed to connect the village easily in terms of transportation of goods, services and people without any inconvenience and delay.. Motufoua is a public school-owned by government and students are future leaders of the nation thus accessibility to better roads is crucial at the same time will benefit the landowners/villages that are care for the students and the whole school.
Links with TKIII Strategic Areas:
This project links with the Strategic Area 9 of TKIII: Infrastructure and Support Services which focuses on providing efficient, high quality infrastructure and support. Roads is identified as one of the seven priority areas in the Strategic Area 9.
Links with Corporate Plan or Sector Plan:
None identified
Planned Implementation Period:
Start: 2021 End: 2023
Project Cost:
Type of Construction: New Road Construction Total construction Area: 25000. 00sq.m Estimate Rate (\$per m2: 1,000.00AUD Project Est. Cost: \$25,000,000
Breakdown Materials Cost: \$15,350,000 Plants/Equipment Cost: 4,650,000 Labour Cost: 3,600,000 Documentation Cost: 800,000 Contingency Sum: 600,000

Project Benefit:
Improves road conditions making it easier and safer for vehicles to travel. Provides better access to areas that were once difficult to get to. Allows faster transportation in cases of emergencies. Reduces the risk of accidents caused by bad road conditions It will be convenient to high schools students to travel to and fro MSS as well as the whole village. Transport general goods and service to and from school to the main village.
Project Status (underline):
Feasibility study – A survey team has visited the island this year for further assessment Next stage is the actual construction/tarsealing of the road
Funding Source (underline):
Capital: Seeking Development Partners Assistance Maintenance: Development Partner co financing with government
Climate Change/Disaster Risk Management:
It will be climate resilience, the tarseal will raise to avoid flooding as well

Project Title:
Submarine Cable
Location
Funafuti
Responsible Agency
ICT Department
Links with TKIII strategic areas
Thematic Area 9: Infrastructure and Support Services
Links with corporate plan or sector plan
None Identified
Planned implementation period
Start:2021 End: 2025
Project cost
AUD\$ 42 million
Project benefits
The Project Development Objective is to improve access to telecommunications services in Tuvalu. The direct beneficiaries of the project will be the people of Tuvalu (eg. Individuals, businesses, Government agencies and other institutions) who will receive improved services and greater access to ICT facilities, including voice and internet services, once the project is completed. The project will also indirectly support the expansion of a new range of important services, including mobile-phone banking, e-commerce, and e-government.
Project status
Concept note
Funding source
Seeking development partner assistance
Climate Change/Disaster risk management
Given the vulnerability of Tuvalu to the effects of climate change and the many hazards, it is important and crucial that the internet is well good and fast for everyone to communicate effectively with concerned authorities as well as with their loved ones in times of such disasters.
Climate change threats
None Identified
Climate Proofing
None Identified

Project Title:
Manu Folau Replacement
Location
Tuvalu
Responsible Agency
Ministry of Transport, Energy & Tourism
Project Description
This project proposes to look for a viable replacement of the Manu Folau either through the purchase of a used vessel or a brand new one.
Links with TKIII strategic areas
The project links with the Strategic Area 9 of TKIII: Infrastructure and Support Services, which stresses the importance of improving Tuvalu's maritime services to ensure travel safety, faster and safer cargo handling and improving the shipping services overall.
Links with corporate plan or sector plan
None Identified
Planned implementation period
Start: 2020 End: 2022
Project cost
Estimated capital cost: A\$15m Estimated annual maintenance cost: A\$0.3m
Project benefits
Help relieve some of the inter-island cargo and passenger traffic congestion. Improves travel safety and effective handling of a greater range of cargo. Currently, the Manufolau is not safe and recommended to take passengers and cargo. Its condition is not up to standard and therefore it has been significantly deteriorated. It a priority of the new government to purchase the replacement of this vessel to transport passengers and cargo between islands in a more safety way.
Project status
Concept note
Funding source
Capital: Seeking development partners' assistance Maintenance: Can be co-financing government and a development
Climate Change/Disaster risk management
Replacement vessel will enhance the resilience to strong winds and for the safety of passengers. Measures to sustain the vessel and the rusting and corrosion of the sea will be considered in its design.



Climate change threats

Increased ocean acidity, higher temperatures and more frequent cyclones are the main threats to the replacement vessel as there is an increase risk in exposure to salt corrosion and damage caused. These threats could lead to higher maintenance costs for the project.

Climate proofing resilience measures

Building resilience to the climate change effects can be done through regular inspections for any damages and repair them before it becomes a major issue. Scheduled repainting and coating of the vessel to rid of rusts and corrosion.

Project Title:
Solid and Organic Waste Management
Location
Funafuti and all Outer Islands
Responsible Agency
Waste and Sanitation Division- Public Works Department
Project Description
<p>Tuvalu is a small island country. It has 26 sq km of land and consists of 9 atoll islands. It has poor infertile soil with heavy reliance on marine resources as the livelihood source. It has a population of 11,000 people with more than half of the population reside here in Funafuti.</p> <p>Most of the water and sanitation services is done and delivered by the Public Works Department (PWD). Given our vulnerability and closure proximity to the sea there should be proper machineries and tools in place to take out the septic waste.</p> <p>Currently there is only one waste truck and this constraint and delay required work at most times. There are many government houses here in Funafuti and have small septic tanks and one truck cannot cater for all the households. It is therefore proposing for another waste truck.</p> <p>Organic waste is a major component of the total waste volume generated in Tuvalu (more than 70%), therefore, it is critical to reduce the amount of kitchen and green waste. Additionally, open burning of waste and littering is a major environmental and health concern throughout Tuvalu as it poses a serious public health nuisance, causes environmental pollution and presents a fire risk to properties. Utilizing organic waste generated from our kitchens in a way that will be beneficial to the environment can easily be achieved through composting. Home composting is the most effective way of reducing more than 25% of waste generated in the home and is the best solution to combat open burning of such waste. It is by far regarded as the environmental best practice for reducing organic waste. Compost, which is a final product of the composting process, can also be used as manure for home gardening.</p> <p>The Department of Waste Management under the Ministry of Local Government, through its various on-going improvement of solid waste on the Island will need additional household, commercial and public litter bins in addition to our existing litter bins to further maximize the regular collection of waste on the island. The project will help maintain cleanliness of the surrounding, preventing contamination and promote hygiene which also contribute to minimize the spread of diseases.</p> <p>With the advent of additional litter bins on the island will be able to widen its scope and will be of much help in establishing an efficient and systematic waste management on the island. Cleanliness and hygiene directly helps to boost tourism into the country.</p>
Links with TKIII strategic areas
SA5: Falekaupule and Island Development
Links with corporate plan or sector plan
Te Kakeega III; 4 Years Roadmap and MLGA Corporate plan

Planned implementation period
Start: 2021 End:2022
Project cost
A\$41,000,000
Project benefits
<ul style="list-style-type: none"> • Reduce landfill waste, yard and food scraps make up to 25-50% of what we throw away. It has been estimated that one fourth of waste in our landfills could have been composted. Composting not only removes content from the dumpsites but utilizes that content • Creates Nutrients rich soil, composting increases the quality of soil by increasing the amount of organic materials and micronutrients. • Helps the reduce gross greenhouse gas emissions, one of the biggest contributors of greenhouse gases, specifically methane, is from our landfills. If we composted the organic portion of our waste, we could drastically reduce those emissions. • Positively affects air quality, many people who don't compost, incinerate their yard waste. Burning yard waste can release the harmful chemicals found in fertilizers, weed killers and bug sprays into the air. Many of the chemicals can lead to health problems such as asthma • Neutralizes soil. In the case of Tuvalu the soil is too acidic or basic for plants to grow properly. Adding compost to soil helps to regulate the acid and alkaline levels in the soil. • Increase biodiversity. Composting attracts many kinds of worms, bacteria's, birds, fungi and insects that are beneficial to the crop growing process. • Composting is cheap. Going green can be expensive. Buying local foods or making the decision to purchase products made in other countries can cost significantly more than their less-environmentally friendly counterparts. Composting may only require a purchasing a receptacle to recycle waste. • Cost effective. • The supply of Household wheelie bins, commercial and public litter bins on all the Islands shall augment the efficiency and effectiveness of the collection of basics services of the department. This will also improve the managing and maintaining well of household and public waste. Wheelie bins are a safer and more efficient system for operators to use, and tidier and more hygienic for householders and public places. • And more importantly, to achieve the Tuvalu Integrated Waste Policy and Action Plan Vision "Cleaner and Healthier Tuvalu for today and the future generation".
Project status (underline)
Concept note
Funding source (underline)
Capital: <u>None identified</u> / GOT/ Public Enterprise/ Development Partner Maintenance: None identified/ <u>GOT</u> / Kaupule/ Public Enterprise/ Development Partner



Climate Change/Disaster risk management
Resilience score in MCA analysis: 3 Climate proofing necessary (underline): <u>Yes</u> / No
Climate change threats
Cyclone: Frequent number of cyclones, poses a major threat if the building is not climate resilient. Sea level rise and storm surges: No threats

Project Title:
Education Infrastructure Building Upgrade
Location
Motufoua, Vaitupu Isaland, Nanumea Island and Tuvalu Maritime Training Institute (TMTI), Amatuku Islet.
Responsible Agency
Ministry of Education, Youth and Sports
Project Description
<p>Upgrading of the TMTI in Amatuku will provide a good and positive learning environment for the students. There a lot of infrastructure in place that are running down and need to be maintained. This is also for the safety of the students.</p> <p>The upgrading package will include the renovation of the classrooms, the ablution, kitchen and dormitories. There are 2 to 3 blocks of classroom with an average number of 40 students. The current materials that have built these infrastructures are not climate proof and resilient. They are currently rotting. A fire can cause easily if the leakage is continuing as water will trip into the wiring system. Staff residence need to be renovated as well. Equipment (s) and facilities in place to do training and provide live experience of being a seafarer is deteriorating and depreciating as well. Having all these facilities upgraded will enhance the learning experience of the students as well as meeting international safety standards and regulations.</p> <p>In addition is the upgrading of the Motufoua buildings. 80% of the national students are attending Motufoua Secondary School. This is a public secondary school located in Vaitupu. Given the importance of Education and it is a SDDG goal for all children to access to education, the government needs to provide a robust learning environment that effectively contributed to the learning outcomes of the students. Most of the buildings- classrooms, dormitories and other facilities are running down and need to be upgrade. The whole premise needs to upgrade to a good standard thus</p> <p>Currently there is a an educational assessment rolling out given the impacts of covid 19, it is about time that Tuvalu to look at avenues that will provide the sustainability of education. There are 2 consultants that are now engaged in carrying this coping study and report on the possibility to establish a Tuvalu National Institute of Technical Training and/or Tuvalu National University: Thus getting all these educational infrastructure upgraded can serve this purpose in the future.</p> <p>The last component is the upgrading of classrooms in Nanumea to cater for secondary educational delivery. Currently, is the just the primary school building on the island. The government of the day is proposing for another secondary school to be located in the northern islands. Two public schools will ease the delivery to students as they will be not crowded. Teachers will have more time to individual student and there is a guarantee will enhance their performance.</p>

Links with TKIII strategic areas
This project links with the Strategic Area 9 of TKIII: Infrastructure and Support Services. It also links to Strategic Area 7: Education and Human Resources Goal: Provide high quality education; equip people with knowledge and skills to develop more self-reliance; promote Tuvalu's cultural and spiritual values.
Links with Corporate Plan or Sector Plan:
Yes it links with various Educational plans.
Planned implementation period
Start: This project is intend to begin next year, 2021 and anticipate to end in 2023
Project cost
\$2,000,000(Motufoua Upgrade) Year 1 2020- Conceptual design- \$5,000 Year 2 2022- Signing of contract and procurement of materials, transportation to VTP- \$1,000,000 Year 3 2023- Construction works commence- \$995,000
\$2,000,000 (TMTI Upgrade) Year 1 concept design - \$500,000 Year 2 Construction - \$1,500,000
\$4,200,000 (Nanumea Classrooms Upgrade) Materials cost- \$2,400,000 Plants/Equipment cost- \$200,000 Labour cost- \$1,500,000 Design cost- \$100,000 Total: \$8,200,000
Project benefits
<ul style="list-style-type: none"> • Boosting the level of quality education for seafarers • Effective delivery of services because of the readiness of facilities and equipment (s) in place • Compliance with international standards
Project status (underline)
Concept note. Once it is approved then will secure funding
Funding source (underline)
Secure funding assistance from development partners
Climate Change/Disaster risk management
Upgrading of Educational Infrastructure (Motufoua, TMTI and Nanumea) will be climate resilient thus able to withstand strong winds and cyclones.

Project Title:
National Library and Archives
Location
Funafuti
Responsible Agency
Ministry of Education, Youth and Sports
Links with TKIII strategic areas
Thematic Area 7: Education and Human Resources Goal: Provide high quality education; equip people with knowledge and skills to develop more self-reliance; promote Tuvalu’s cultural and spiritual values.
Links with Corporate Plan or Sector Plan:
Linked with Education corporate plan and government priorities.
Planned implementation period
Project feasibility study: <ul style="list-style-type: none"> • Stage 1: Development Documentation review & consultation <ul style="list-style-type: none"> - Over 6 months • Stage 2: Schematic Plan & high level cost estimation <ul style="list-style-type: none"> - Over 6 months: 29th July 2018 – 26th August 2018. • Stage 3: Development of the concept design, space brief & costs plan <ul style="list-style-type: none"> - Over 9 months Project Implementation: July 2020 – July 2023
Project cost
Total Cost: 10 million Phase 1: conceptual design has been completed since 2018 – funded by the Tuvalu Government Phase 2: documentation – awaiting procurement plan from Central Procurement Unit (deadline was July, 2020) – fund by Government of Tuvalu. Phase 3: project execution duration from Year 2021-Year 2023. i. Basement Floor – Year 2021 (2 millions) <ul style="list-style-type: none"> • Water tank • Septic tank and soaker pit ii. Ground Floor – Year 2022 (4million) <ul style="list-style-type: none"> • Building services • Active archive & administration area • Vehicular Access and circulation iii. First Floor – Year 2023 (4million) <ul style="list-style-type: none"> • Permanent archive & administration area • Cultural & exhibition area • Library area

Project benefits
<ul style="list-style-type: none"> • Development will benefit an extensive portion of over 60 percent of the total population (10,779) economically, socially, knowledge sharing and research development. • Development will encourage and increase the local community to come onto the facility and in turn provide access to education material which will align with the education department core imperative. • The rich Tuvalu heritage is preserved and the significant risk of deterioration of existing archive material reduced. • Encouraging local Tuvalu artisan to develop knowledge, work with cohorts and empower Tuvalu art to the international art world. • Provide equal opportunity to disadvantaged patrons and staff the design has some provision for disability access. • With a diverse range of functions, the library will be able to provide a service to the people of Tuvalu and its users that is demographically diverse in age group, education material content and geographic integration with other Tuvalu islands beyond Funafuti. • Employment opportunities available from the implementation stage and construction stage for locals, with an expected increase of over 20 percent in nominal GDP. • Maximum capacity of this building is assumed to be 500 patrons if all spaces are filled completely. Daily operational capacity is assumed to be 100 patrons, hence a substantial increase in staffing is expected, more employment opportunities for locals is presumably necessary.
Project status (underline)
Concept note.
Funding source (underline)
Development partners
Climate Change/Disaster risk management
<ul style="list-style-type: none"> • Tuvalu Waste Department will be supporting the collection of separated waste periodically to avoid overflow of waste. • Aligning government strategies to global warming and carbon footprints through promoting waste separation initiatives at the Library premises. • Natural light windows and sky light along the central roof area will create ample daylight, possible reduction in usage of electricity hence less CFC emission. • Installation of solar panels and storage battery room to meet the building power supply demand, and to reduce usage of electricity.
Climate change threats
The proposed site for the project appears to have borrowed pit area and is low as parts of the site is submerged in water. There is a risk the site can be affected as the King tide increase coverage due to sea level rises over time.

Climate proofing

- The proposed building heights will be at least 2 storeys about ground with a raised floor and basement level. To prevent future flooding, the entire structure will need to be raised at least a meter from the highest point of site contour. The propose roof will be a simple combined gable roof structure suited to tropical climate.
- The building structure is design to ensure energy security and low carbon future for Tuvalu.

Project Title
Building of the new Parliament House
Location
Funafuti
Responsible Agency
Parliament Office
Project Description
Historically, since Tuvalu independence 1978, Tuvalu still have no Parliament House. The Parliament building is a key infrastructure articulated in the Government 4-years roadmap. The new Parliament House will accommodate the offices for the Speaker and his staff as well as the Parliament meeting room for the Parliament Sessions. Currently the Parliament sessions are being held in the Tomasi Puapua Convention -Centre which is a convention centre for various meetings. The new parliament building will be a space for only the Parliament sessions. The proposed site is yet to confirm but once this concept note is finalized and approved, the government can secure a land from its leased land.
Links with TKIII strategic areas
SA2: Good Governance
Links with corporate plan or sector plan
Te Kakeega III; 4 Years Roadmap
Planned implementation period
Start: 2021 End:2023
Project cost
\$5,400,000 AU
Project benefits
<ul style="list-style-type: none"> • Building a Parliament House is significant and could be a constitutional requirement pursuant to section 81 of the Constitution to establish the Parliament for Tuvalu. The Parliament as an institution cannot be completed to perform its constitutional functions if it has no permanent office, location which is a core requirement for any entity including businesses to be legally registered. • Provides sufficient administrative offices, a Parliament chamber, and offices for MPs. • Provides office spaces for the office of the Auditor General to properly reflected its independent from the Executive. • More spaces available from the new Parliament building, thus more people will be able to attend and listening Parliament debate. • Conveys a clear message to the people that their voices are matter because a Parliament House is the heart of Parliament so as our democracy. • Provides a permanent space for all Members to assemble to ask questions, to debate on national issues, and to legislate national laws.

- Increase awareness and educational purpose on students on roles and duties of leaders including conducting of Youth Parliaments and Women Parliaments.
- More space to host Speakers and Parliament Regional Conferences.
- More space to host the Commonwealth and UNDP professional trainings for Pacific Parliamentarians and Parliamentary Staff.
- Provide sufficient space for a Parliament library and storage.
- Underneath the Parliament building, a concrete reservoir will be built. Thus this will increase the capacity for water storage.
- The rooftop of the building could use to install solar panels.

If ventilator provides oxygen for COVID-19 patients, Parliament House provides oxygen to democracy by upholding the principles of separation of powers and its values

Project status (underline)

Concept note

Funding source (underline)

Capital: Seeking donor funding
Maintenance: Government

Climate Change/Disaster risk management

Climate proofing necessary (underline): Yes

Climate change threats

Cyclone: Frequent number of cyclones, poses a major threat if the building is not climate resilient.
Sea level rise and storm surges: The building should be raised up by meters to mitigate risks from sea level rise and storm surges.

Climate Proofing

Measures can include building the Parliament building that can withstand a category 5 cyclone.

Description	Amount (AUD\$)
Structure (including footings, reinforcement, roofing, timbers, cements, sand, and aggregates)	2,700,000
Windows and Doors	80,000
Equipment	150,000
Wall and Ceiling (including lights, security and fire alarm, fire equipment, air-conditioning)	1,100,000
Plumbing	90,000
Drainage	90,000
Road Works	90,000
Transportation	800,000
Labour Costs	300,000
Total Cost	5,400,000

Project Title
New Police Complex
Location
Funafuti
Responsible Agency
Tuvalu Police Force
Links with TKIII strategic areas
SA2:Good Governance
Project Description
The Project aim to build a new Office building for Police that offers a decent environment for police officers to play quality role in the law enforcement system, thus provide better monitoring of criminal activity, community patrols, better respond to emergency calls, provides quality investigation of crimes and mainly focus on protecting the community and property.
Links with corporate plan or sector plan
4 Year Roadmap
Planned implementation period
Start:2021; End: 2022
Project cost
4.8 million
Project benefits
<p>This project will provide a quality, safe and well equipped facility to all police officers which may results in delivering better and quality services to all citizens of Tuvalu. The project will help the TPS in accommodating the need of all individuals with different situations. Listed below are the project benefits that TPS expected to provide internally and externally.</p> <ul style="list-style-type: none"> • More spaces for TPS as new units (sections) established such as Domestic Violence unit, Community Policing Unit, Transnational Crime Unit, Intelligence unit and Training unit. • Good and safe work environment for all officers • Separate watch house with isolate cells for various genders and Children • More victims will open up as there will be a specific room and a space for them • New wiring plan of the electricity will be able to maintain the quality of TPS assets • Prevent the privacy of vulnerable (children, women & disabilities) from the accessibility of the public
Project status (underline)
Concept note
Funding source (underline)
Development Partner; Maintenance: Government



Climate Change/Disaster risk management
It needs to be climate proof to withstand strong cyclones and resilient in the long term 20-50 years. Disaster and management risks measures will be taken to consideration such as climate proofing and resilient building.
Climate change threats
Cyclone; Sea level rise: Sea level rise is an on-going issue currently faced by all of us. Therefore, the new building should be built in order to address risks from sea level rise.
Climate Proofing Resilience Measures
Climate proofing measures can include building a structure that can withstand devastated impacts from cyclones of category 5. The foundation profile should be raised up to mitigate risks associated with sea level rise. Public Works department and contractor should comply with the building code in using the building materials that are climate resilient.

Appendix 5: Major Development Projects by Development Partner

Development Partner	Project Name	Duration	Amount (A\$ million)
Transport			
Asian Development Bank (ADB)	Outer island maritime infrastructure project	2018–2022	15.4
ADB	Outer island maritime infrastructure project	2016	11.3
World Bank	Tuvalu Aviation Investment Project	2015–2020	18
World Bank	Maritime Investment in Climate Resilient Operations	2018–2024	20
Japan	Construction of a Cargo/Passenger Vessel	2013–2015	14.7
New Zealand	Ship to Shore Transport Project	2008–2014	3.5
Information and Communication Technology			
World Bank	Tuvalu Telecommunication and ICT Development Project	2019–2023	29
Energy			
European Union	Renewable Energy	2013–2015	8.0
World Bank	Energy Sector Development Project	2016–2018	7.0
United Arab Emirates	Pacific Partnership Fund–Solar	2014–2015	50.0a
Environmental Sustainability			
GCF/UNDP	Tuvalu Coastal Adaptation Protection	2018–2023	36
UNDP	Ridge to Reef Project	2015–2020	8.4
Japan	Beach Nourishment Project	2015–2017	2.0
World Bank	Pacific Islands Regional Ocean scape Program	2017	6.9

GCF = Global Climate Fund, UNDP = United Nations Development Programme.

^a The UAE-Pacific Partnership Fund disburses \$50 million in grants for renewable energy generation projects in Pacific countries. The fund was launched at the Pacific Energy Summit in Auckland in March 2013. Project agreements between the UAE and 10 Pacific countries including Tuvalu. The Fund responds to identification of renewable energy as a key growth enabler at the 2012 Pacific Leaders' Meeting of the International Renewable Energy Agency.

Source: Government of Tuvalu. National budget documents 2013–2015, financing agreements.

