



Combined Project Information Documents / Integrated Safeguards Datasheet (PID/ISDS)

Appraisal Stage | Date Prepared/Updated: 24-Oct-2021 | Report No: PIDISDSA32625

**BASIC INFORMATION****A. Basic Project Data**

Country Vanuatu	Project ID P177135	Project Name Vanuatu Climate Resilient Transport Project - Additional Financing	Parent Project ID (if any) P167382
Parent Project Name Vanuatu Climate Resilient Transport Project	Region EAST ASIA AND PACIFIC	Estimated Appraisal Date 21-Oct-2021	Estimated Board Date 17-Dec-2021
Practice Area (Lead) Transport	Financing Instrument Investment Project Financing	Borrower(s) Republic of Vanuatu	Implementing Agency Ministry of Infrastructure and Public Utilities

Proposed Development Objective(s) Parent

To improve the climate resilience of the Recipient's road network, with emphasis on the selected project road, and in the event of an Eligible Crisis or Emergency, to provide an immediate response to the Eligible Crisis or Emergency.

Components

- Component 1: Sectoral and Spatial Planning Tools
- Component 2: Climate Resilient Infrastructure Solutions
- Component 3: Strengthening the Enabling Environment
- Component 4: Contingent Emergency Response

PROJECT FINANCING DATA (US\$, Millions)**SUMMARY**

Total Project Cost	47.04
Total Financing	47.04
of which IBRD/IDA	47.04
Financing Gap	0.00

DETAILS**World Bank Group Financing**

International Development Association (IDA)	47.04
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IDA Credit	38.52
IDA Grant	8.52

Environmental Assessment Category

B-Partial Assessment

Decision

The review did authorize the team to appraise and negotiate

Other Decision (as needed)

B. Introduction and Context

1. The Republic of Vanuatu is a small island nation located in the South Pacific about 2,000 km to the east of Australia. Comprising 83 islands, it has a total land area of some 12,200 km² scattered over an exclusive economic zone of about 827,000 km². With an almost entirely Melanesian population of about 307,150 in 2020¹, Vanuatu is the fourth largest country in the Pacific. The Island of Espiritu Santo, where the project road is located, is the largest island in land area in Vanuatu and the second largest in population with a total land area of approximately 4,000 square kilometers and a population of 47,899 as of the 2016 mini census.

2. Vanuatu's per capita gross domestic product (GDP) in 2020 was US\$2,783, reduced by about US\$300 since 2019 due to the severe shock caused to the tourism and hospitality industry by COVID19². Travel and tourism sector accounts for a quarter of Vanuatu's GDP and around 20 percent of total employment. Other major economic sectors include agriculture, forestry, and fishing.

3. As a Pacific island country, Vanuatu is one of the most vulnerable countries in the world to climate change and natural disaster risks, with an average 7 percent annual losses of its GDP caused by climatic and natural hazards³. The latest information from the Pacific-Australia Climate Change Science and Adaptation Planning Program indicates that the frequency and intensity of extreme weather and climate events, such as heavy rainfall, strong winds and storm surges is already on the rise throughout the region.⁴ Particularly, the increasing risks from tropical cyclone put the socio-economic development of Vanuatu under significant threat. Following the devastating category 5 Cyclone Pam in 2015, Vanuatu was attacked again by a category 5 cyclone Harold in April 2020. The damage level caused by Cyclone Harold is estimated to be at least equivalent, if not worse, than Cyclone Pam in 2015. The Cyclone Harold hit the central islands of Vanuatu particularly hard, including the Island of Espiritu Santo.

¹ World Population Review, 2021.

² World Bank national accounts data, 2021.

³ World Bank, Climate Change and Hazard Portal, 2020.

⁴ "Climate Variability, Extremes and Change in the Western Tropical Pacific: New Science and Updated Country Reports," Pacific-Australia Climate Change Science and Adaptation Planning Program, 2014.



4. In addition, of Vanuatu's total population, about 70 percent lives within one kilometer of the coast, and critical infrastructure including roads, hospitals, schools, places of employment, port facilities, tourist facilities, power plants and airports, are located primarily in the coastal zone. As a result, the transport network faces a range of issues that increase its climate vulnerability such as: (i) coastal exposure to sea-level rise, storm surge, and wave action during cyclones and tsunamis; (ii) flooding and landslides associated with extreme rainfall events; (iii) damage from earthquakes; and, (iv) accelerated pavement deterioration due to extreme weather and rising water tables.

5. **Gender constraints in Vanuatu are wide-ranging and entrenched in cultural and historical factors.** Vanuatu is a traditionally male-dominated and largely patriarchal society. In terms of total population, the sex ratio is 105 males to 100 females. Traditional customary law administered by Chiefs and recognized by Vanuatu's Constitution can operate to discriminate against women. Despite ratification of the Convention Against all Forms of Discrimination against Women, several of Vanuatu's laws continue to discriminate against women, for example in relation to matrimonial property, inheritance, and citizenship. Women's political representation in Vanuatu is low, with no women currently represented in national parliament. Only 1.4 percent of members ever elected to parliament have been women. Women and girls do much of the country's agricultural work, representing 96 percent of open-air market vendors, but are under-represented in formal sector employment (36 percent). Current statistics in Vanuatu estimate that 60 percent of Ni-Vanuatu women have experienced physical and/or sexual abuse in their lives. The child sexual abuse rate stands at 30 percent and about 40 percent of young people report that they have exchanged sex for money or gifts.⁵ Women and girls are at high risk of assault on public transport. The main service provider to women experiencing or fleeing situations of violence is the Vanuatu Women's Centre (VWC) which currently only has refuges in more populated areas; thus, challenges remain in terms of access for women and girls in remote areas.

Sectoral and Institutional Context

6. The transport sector is under the overall jurisdiction of the Ministry of Infrastructure and Public Utilities (MIPU). Established in 2005, the Ministry has the mandate to develop, maintain, and manage the key national infrastructure assets in the areas of land transport, maritime transport, aviation and water supply. MIPU consists of: Public Works Department (PWD); Ports and Maritime Department; Civil Aviation Authority; and Corporate Services Unit.⁶ PWD is responsible for the road network (including vehicle carriageways, bridges, watercourse crossings, footpaths and drainage systems), outer island air strips, and some water and sanitation facilities. PWD has a total of 153 staff positions, of which 31 are based at the Head Office in Port Vila and 122 are spread across the six PWD's Provincial Divisions. About 20 percent of positions are vacant. MIPU is implementing the ongoing World Bank-funded Vanuatu Infrastructure Reconstruction and Improvement Project (VIRIP).⁷

7. The Ministry of Climate Change Adaptation (MCCA) is the primary government entity in charge of climate

⁵ Pacific Women Shaping Pacific Development.

⁶ There are also six statutory bodies attached to MIPU, including: (i) Airports Vanuatu Limited; (ii) Vanuatu Post; (iii) Ifira Wharf and Stevedoring; (iv) Vanuatu Maritime College; (v) Office of the Maritime Regulator; and, (vi) Commissioner of Maritime Affairs Office.

⁷ VIRIP (P156505) was approved on June 17, 2016 with US\$25 million equivalent IDA credit and US\$25 million equivalent IDA grant. The PDO is to (i) reconstruct and/or improve the disaster and climate resilience of selected public-sector assets in provinces impacted by Tropical Cyclone Pam; and, (ii) provide immediate and effective response to an Eligible Crisis or Emergency.



change and disaster risk management. Established in 2013 as one of the very first ministries of climate change in the Pacific region, MCCA consists of: Vanuatu Meteorology and Geo-hazards Department (VMGD); National Disaster Management Office (NDMO); Department of Energy; Department of Environmental Protection and Conservation; and, Corporate Services Unit. VGMD and NDMO are particularly relevant for the resilience agenda. The objective of VMGD includes ‘improve communication and delivery of weather, climate, climate change, flood, volcano, earthquake information, forecasts, services and warnings’; and the NDMO is mandated to ‘enhance Disaster Risk Management (DRM) operations preparedness, response and recovery for a safer, secure and resilient Vanuatu’.⁸

8. The Vanuatu Public Roads Act No. 35 of 2013 classifies public roads that are the responsibility of MIPU. This classification identifies arterial roads, feeder roads and urban roads.⁹ While arterial and feeder roads are found in rural areas on all islands, urban roads are found only in Port Vila and Luganville. As summarized in Table 1, the 2,609 kilometers of rural road network consists of 209 kilometers of sealed road network (8 percent), 1,284 kilometers of gravel road network (49 percent), 1,080 kilometers of earth road network (41 percent), and 35 kilometers of concrete road network (1 percent). Approximately 43 percent of the rural road network (including almost all the sealed road network) are in Sanma Province (with Santo Island) and Shefa Province (with Efate Island), which are Vanuatu’s two largest provinces. In Sanma, a total of 703 kilometers of road network exists, of which 73 kilometers (10 percent) are sealed, 537 kilometers (76 percent) are gravel, 90 kilometers (13 percent) are earth, and 3 kilometers (0 percent) are concrete roads. There is a clear need for investment in Sanma’s road network: Sanma accounts for 20 percent of the national population and 26 percent of the country’s road network, but only 10 percent of Sanma’s roads are sealed, compared with 28 percent in Shefa. The sealing of the project roads aims to avoid damage due to high rainfall intensities, ensuring year-round access for road users and reducing the need for frequent regrading and regravelling.

Table 1: Vanuatu Rural Road Network as of December 2018

Province	Sealed	Gravel	Earth	Concrete	Total
Malampa	0.00	268.30	237.42	3.99	509.70
Penama	0.00	232.34	210.60	9.89	452.83
Sanma	73.35	536.76	89.91	3.40	703.42
Shefa	115.80	118.72	166.99	5.42	406.93
Tafea	19.92	112.25	338.70	8.97	479.84
Torba	0.00	15.68	36.79	3.82	56.29
Total	209.07	1,284.05	1,080.41	35.49	2,609.01

Source: PWD, Road Inventory Management System (RIMS)

Note: This does not include the length of urban roads in Port Vila (171 kilometers) and Luganville (131 kilometers).

9. Nationwide traffic data collected for the first time in 2016 shows that the road in front of the Vanuatu Agriculture College in Luganville (outside of South Santo Road) has the highest traffic volume on Santo with 1,269 vehicles per day.¹⁰ Higher traffic volumes (200-500 vehicles per day) are also found in the road corridors near Luganville, including the East Coast Road up to Loreviakarkar and South Santo Road up to Tanovoli. The rest of the road network had low traffic volumes of less than 200 vehicles per day, mostly consisting of small

⁸ Vanuatu Ministry of Climate Change and Adaptation Corporate Plan 2016-2018.

⁹ The Act provides for the declaration of public roads along with a fixed road reserve of (i) 15 meters either side of the center line for an arterial road; or, (ii) 10 meters either side of the centerline for a feeder road or an urban road.

¹⁰ PWD, Traffic Data Collection – Survey Report, March 2017.



commercial vehicles (pickups).

10. **Due to the overall climatic and geographic features of Vanuatu, the country's road infrastructure is heavily exposed to climate and natural disasters.** This is compounded with the high sensitivity of the road network in Vanuatu towards extreme hazards such as heavy rainfall, flooding, and landslides due to poor structural characteristics and inadequate road maintenance. Out of 2,609 kilometers of rural road network, nearly 90 percent is not sealed, making these roads impassable during heavy rains. Once damaged, gravel roads often do not get timely and adequate maintenance or rehabilitation due to budgetary constraints. In addition, much of the road network is situated on the perimeter of the islands and is only a few meters above sea level, hence extremely vulnerable to cyclones and storm surges. Flood-related disruptions of the road network have significant socioeconomic consequences partly because the existing road network has no alternative route in the event of disruptions.¹¹

11. **Vanuatu's poor road infrastructure condition – part of which is due to high exposure to frequent natural and climate change disasters – make road safety measures paramount for the well-being of road users.** In 2016, according to the World Health Organization (WHO), the road safety fatality rate was 15.9 fatalities per 100,000 population,¹² with 43 estimated road traffic deaths in Vanuatu that year.¹³ According to the Vanuatu Police Force, the primary cause of road accidents in Vanuatu is speeding. Considering strong growth in vehicle registrations, which are increasing at 12.8 percent per year from 2016 to 2018,¹⁴ the number of road deaths and serious injuries will likely increase without mitigating measures being out in place. There is no database on road safety, and WHO highlighted that data is seriously underreported. A Global Road Safety Facility (GRSF)-funded road safety management capacity assessment is currently underway to start to address this issue which includes the need to improve road safety audit practices throughout the road lifecycle. Road safety audits are being introduced on road projects funded by some development partners, including for this project.

12. **Effective road maintenance is crucial to reduce vulnerability to climate change and natural disasters and prevent high costs for rehabilitation and reconstruction.** Road maintenance in Vanuatu is currently insufficient. In 2017, GOV allocated VUV 173.7 million to routine maintenance of rural roads, and VUV 174.5 million to periodic maintenance of rural roads. The annual work programs for maintenance are developed through a consultative selection process for the road sections to be maintained, conducted by PWD provincial and head office engineers using data from RIMS supported by embedded international advisers. With the limited budget available, the focus is on ensuring the roads are passable in all weather conditions and improving the resilience of steep sections and water crossings, to increase the percentage of the population that has year-round vehicular access to markets, services and transport hubs. Traditionally, PWD conducted routine and periodic maintenance through force account. The force account share has been reducing over time and in 2017 only about 14.6 percent of the work value was expected to be carried out through the force account, down from

¹¹ For example, the approximately 200-meter water crossing at Navaka River on South Santo Road never had a bridge. The crossing becomes impassable during heavy rains (it has an even wider floodplain evidenced by banks set well back from the braided channel). When Cyclone Hola hit the area in February 2018, two children were reportedly swept away by the fast-moving river when returning home from school.

¹² The road fatality rate is below that in Tonga (16.8) and the Solomon Islands (17.4) but higher than that in Fiji (9.6), Samoa (11.3), and Papua New Guinea (14.2).

¹³ WHO, Global Status Report on Road Safety 2018, Geneva.

¹⁴ According to the National Statistics Office, Quarterly Statistical Indicator January–March 2019, the registration of new motor vehicles in Port Vila and Luganville increased from 1,300 vehicles in 2016 to 1,653 vehicles in 2018.



63 percent in 2013.¹⁵ The bulk of the maintenance is now procured through island-based contractors, with community-based contractors undertaking most of the routine maintenance. Contract values are low and for one year due to the GOV procurement conditions, although an administrative process is underway to increase contract values and permit three-year contracts. It is accepted by PWD that there is a need to incrementally migrate to a road asset management system based on life cycle costing, to increase resilience and provide an evidence-based case for increased budget funding for maintenance.

C. Proposed Development Objective(s)

Original PDO

To improve the climate resilience of the Recipient's road network, with emphasis on the selected project road, and in the event of an Eligible Crisis or Emergency, to provide an immediate response to the Eligible Crisis or Emergency.

Current PDO

The PDO remains unchanged.

Key Results

The project's Result Framework and result indicators remain unchanged.

PDO Level Indicators

Progress will be measured against the following PDO-level results indicators:

- (a) Identified planning tools adopted and being used to improve climate resilience of roads (Number);
- (b) Length of road upgraded with climate resilience measures (Kilometers);
- (c) Number of bridges constructed with climate resilience measures (Number); and,
- (d) Identified enabling environment solutions adopted and implemented (Number).

D. Project Description

13. VCRTTP was approved on January 23, 2020, with a total financing of US\$ 66 million (US\$ 35.50 million by credit, IDA-65310, and US\$ 30.50 million by grant, IDA-D5500). It became effective on March 6, 2020. The project is financed by national IDA. Ministry of Finance and Economic Management (MFEM) is the Executing Agency, and the Ministry of Infrastructure and Public Utilities (MIPU) is the Implementing Agency of the project.

14. VCRTTP focuses on rehabilitating the 65km South Santo Road, a priority of the Vanuatu government as it is the only road connecting the southern and western part of the island of Santo with its capital, Luganville. The project road also serves as a critical link for fishing and agricultural products to reach markets in Luganville, as well as providing access to health, education, social services and for tourism.

15. VCRTTP, as part of the World Bank-funded Pacific Climate Resilient Transport Program, has four components: Component 1: Sectoral and Spatial Planning Tools; Component 2: Climate Resilient Infrastructure Solutions; Component 3: Strengthening the Enabling Environment; and Component 4: Contingent Emergency

¹⁵ DFAT, Vanuatu Roads for Development Phase Two, Investment Design Document, September 2018.



Response (CERC). The details of the project components include:

- (a) **Component 1: Sectoral and Spatial Planning Tools (estimated cost US\$0.28 million equivalent).** Component 1 finances the upgrade the existing Road Asset Management System (RAMS) to enable MIPU better capture, store, update, and utilize road asset data for effective decision making. The RAMS will introduce a system module that systematically integrates climate and disaster risk profiles of the road network as a part of asset inventory (e.g., criticality). These risk profiles will enable PWD to prioritize road maintenance investment based on the level of exposure and sensitivity of road assets to climatic and seismic hazards along with conventional parameters such as road conditions. This component is informed by the ongoing Global Facility for Disaster Reduction and Recovery (GFDRR)-funded technical assistance, Resilient Transport in Small Island Developing States (RT-SIDS).

- (b) **Component 2: Climate Resilient Infrastructure Solutions (estimated cost US\$60.75 million equivalent).** This component will finance design, physical works, and maintenance of South Santo Road to improve its resilience to climate-related hazards and seismic disasters using innovative materials, technologies, and adaptation measures. The investments will include: (i) sealing of the existing 60 kilometers of gravel road between Saint Michel and Tasiriki to enhance road resilience and connectivity during rainy seasons; (ii) construction of ten new bridges to address loss of connectivity issues resulting from previous climatic and seismic disasters; (iii) repair of four existing bridges with improved traffic safety; (iv) construction of 102 single and multicellular box culverts to adapt to the forecasted increases in rainfall volumes and intensities; (v) construction of other ancillary structures to improve climate resilience, such as coastal protection, masonry covered drains, unvented drifts, and gabion retaining walls; and, (vi) procurement of Bailey bridges for traffic diversion and emergency response. The investments will be accompanied by consulting services for detailed design and supervision of civil works (including the establishment of a small-sized quality control laboratory near the project site); and, conducting maintenance on South Santo Road through piloting multi-year performance-based maintenance contracts after the defect liability period.

- (c) **Component 3: Strengthening the Enabling Environment (estimated cost US\$4.97 million equivalent).** This component will strengthen the MIPU-PWD's institutional and regulatory functions for road sector asset management using an asset lifecycle-based approach, and thereby systematically improve the climate resilience of Vanuatu's road network. Specifically, this component includes:
 - (i) **Sub-component 3.1: Technical Assistance (estimated cost US\$1.52 million equivalent).** This will include technical support to MIPU-PWD to: (i) undertake a road condition assessment on the selected road network to assist the MIPU/PWD with monitoring, planning and programming of road works using the RAMS; (ii) update technical specifications based on the 2016 Vanuatu Resilient Road Manual; (iii) improve its construction material testing laboratory in Port Vila, facilitating the utilization of local



materials and accreditation of the laboratory for improved quality assurance; (iv) implement the transition plan to put the RAMS into operation; (v) strengthen road maintenance supervision capacity of PWD; (vi) improve practical road management capacity of PWD through piloting the lifecycle-based asset management and undertaking road safety audits and road safety awareness-raising on the Santo's road network outside South Santo Road; and (vii) build climate change capacity within MIPU in collaboration with the Ministry of Climate Change Adaptation through the hiring of a Climate Change Specialist to MIPU-PWD. This subcomponent will also support activities to address the identified gender gap and gender-based violence (GBV) /violence against children (VAC) by implementing the Gender Action Plan and the GBV/VAC Strategy prepared for VCRTTP.

- (ii) **Sub-component 3.2: Project Implementation Support (estimated cost US\$3.45 million equivalent).** This sub-component will finance Project Implementation Unit (PIU)/Project Support Team (PST) contracted staff and operating costs associated with implementation of the project, and yearly audits of the project accounts that MIPU will submit to the World Bank. A PST will be set up and embedded in the PIU to support MIPU in the implementation of the project.

- (d) **Component 4: Contingent Emergency Response (US\$0 million).** Since Vanuatu will remain vulnerable to climate change and severe weather events, even with the successful implementation of the first three components, supporting post-disaster recovery is an important feature of VCRTTP. This zero-dollar component is designed to provide swift response in the event of an Eligible Crisis or Emergency, by enabling the Government of Vanuatu to request the World Bank to reallocate project funds to support emergency response and reconstruction.

16. The Government of Vanuatu, based on a Council of Ministers decision in 2019, informed the World Bank that the remaining IDA19 resources for Vanuatu would be allocated to cover the project financing gap for VCRTTP through an additional financing.

17. The proposed AF is necessary to cover the identified financing gap revealed by the detailed design. The approval of the proposed additional financing is critical for the project to achieve its PDO.

18. The financing shortfall from the original cost estimates under VCRTTP was resulted from the following factors:

- (a) **Underestimated costs during project preparation due to unexpected damage caused by Cyclone Harold in April 2020:** A category 5 tropical cyclone Harold attacked Santo Island in April 2020. It caused significant damages to the project assets (roads and bridges). As a result, the asset conditions have deteriorated heavily compared with in 2019 when project costs were estimated. The comprehensive site surveys during the detailed design in 2021 indicates that the project road and bridges now warrant a more substantial, albeit costlier, interventions. As a result, despite having the same project scope, the final cost estimates are much higher than the one estimated in 2019 by nearly 70%.



- (b) **Unexpected increase of construction material costs due to disruption of international supply chain.** The COVID-19 pandemic has severely disrupted the international supply chain for construction materials. The supply shortage has resulted in a surge of costs, specifically steel and bitumen, which will have to be imported for bridge and road pavement constructions in Vanuatu. The DSC conducted a market price survey across the Pacific region in preparation for cost estimate. The survey found that the materials costs for all identified engineering interventions under the project have almost doubled since 2019.

19. **Due to the surge of construction material prices, the original project financing is no longer sufficient for launching the bidding for both road and bridge works at the same time.** Launching the bidding of project’s road and bridge works at the same time is critical because it ensures the entire 65km South Santo Road (including roads and bridges) to be completed at the same time following the project timeline. It also makes the bidding package more attractive for international bidders and hence maximize competition, especially considering that COVID-19 remains a key barrier for mobilizing international work force and logistics for bidders. Without the proposed AF, the government would have to choose between roads and bridge works for bidding, which compromises the project’s prospect both from technical and procurement points of view.

20. **The proposed AF is to cover a financing gap for civil works under Component 2 ‘Climate Resilient Infrastructure Solutions’,** identified in the detailed design by the DSC. There will be no change in the PDO, the theory of change and result framework/indicators, the safeguard instruments, the project implementation arrangements, and project timeline.

21. The proposed financing allocation across four components of VC RTP, including the proposed AF, is presented in Table 2. The AF will be used to finance the cost overrun for civil works, particularly on road pavement works and bridge works.

Table 2: Proposed Financing Allocation Across VC RTP Components with the Additional Financing (in US\$ million)

Project Components	Original Allocation	Proposed Additional Financing	Total
Component 1: Sectoral and Spatial Planning Tools	0.28	-	0.28
Component 2: Climate Resilient Infrastructure Solutions	60.75	47.04	107.79
▪ Resilient Road Pavement Solutions with hot bitumen and concrete	24.32	13.06	37.38
▪ Repairing or Replacing Existing Bridges	17.80	15.27	33.07
▪ Culverts, Drainage and Slope Protection	5.43	1.35	6.78
▪ Procurement of Bailey Bridges	0.50	1.18	1.68
▪ Others (earthworks, ancillary works, etc.)	2.36	8.58	10.94
▪ VAT	7.87	6.13	14
▪ Contingency	2.47	1.47	3.94
Component 3: Strengthening the Enabling Environment	4.79	-	4.79
Sub-component 3.1: Technical Assistance	1.52	-	1.52
Sub-component 3.2: Project Implementation Support	3.45	-	3.45
Component 4: Contingent Emergency Response	0.00	-	0.00
Total	66.00	47.04	113.04



Financing Cost Overruns for Resilient Road Pavement Solutions (US\$13.06m)

22. For road pavement works, the AF will be used to cover the cost overrun due to (i) detailing of the pavement design; (ii) the surge of market price of construction materials and, (iii) the need to reseal 5-km section between Sarakata Bridge and Saint Michel due to damages from Cyclone Harold as identified by the detailed design.

23. The surge of the market price for construction materials is the primary driver for the financing gap, accounting for about **US\$10.26m or 23 percent**. Due to disruption of international supply chain caused by the COVID-19, the market price for construction materials needed for road pavement works have increased by up to 80 percent compared with the 2019 level, according to DSC's market survey. Despite the increased price, applying road pavement solutions to the project road remains essential for achieving the intended road service level and resilience against climate and disaster risks. Bituminous surface will be applied on the majority of the road to avoid accelerated road deterioration due to increasing heavy rainfall in rainy seasons and higher than anticipated traffic, while cement concrete will be applied on steep slope sections, large water crossings, and four coastal sections to provide further structural resilience.

24. The detailed design identified a need of resurfacing a 5-km section between Sarakata Bridge and Saint Michel due to the damaged caused by Cyclone Harold, which further increased the financing gap. The overall surface condition of this road section has worsened from 'good' in 2019 assessment to 'poor' in the 2021 survey. A road surface treatment is therefore required in order to achieve the PDO of improving the climate resilience of the entire 65km of South Santo Road. Resurfacing works will be carried out within the declared right of way (ROW) and no additional environmental/social impact is expected.

25. Although surfacing treatment was not initially included in the project at appraisal, the 5km Sarakata Bridge-Saint Michel section was part of the project road with engineering interventions planned to accommodate the higher traffic demand and improve its climate resilience and road safety. With the road surface deteriorated, adding pavement works for this section is within the original project scope. The required additional financing under this activity accounts for a small portion of AF amount, around **US\$2.8million or 6 percent**.

Financing Cost Overruns for Climate Resilient and Safer Solutions for Three Project Bridges (US\$ 15.27m)

26. In terms of bridge works, the AF will be used to accommodate the cost overrun due to: (i) the increase of market price for construction materials for bridges; (ii) the revised engineering approach in the detailed design for project bridge No.2, Usa Bridge, project bridge No.6, Adson Bridge, and project bridge No.9, Wailapa Bridge.

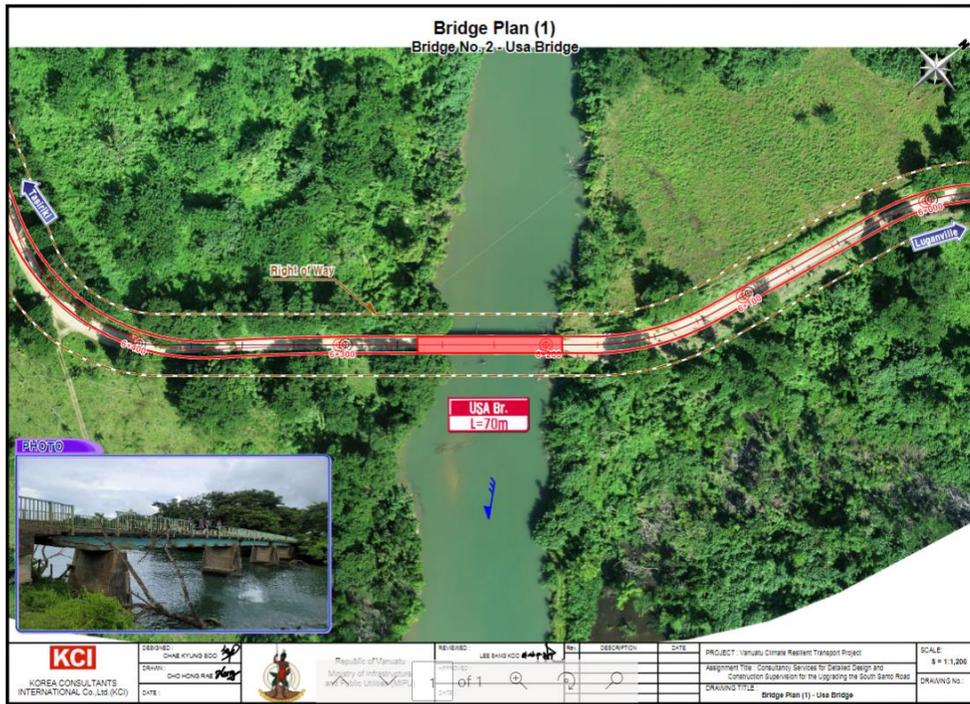
27. Similar to the construction materials for road works, materials needed for bridge construction has also surged significantly from the 2019 level, particularly steels. The large portion of AF for bridge works will be used to cover a financing gap of **US\$8.92m** due to price increase for all bridge works.

28. The change of engineering approach for improving Usa Bridge (No.2) was proposed based on the latest bridge condition assessment for the detailed design. Due to damages caused by Tropical Cyclone Harold, the structural condition of Usa Bridge has significantly worsened compared with in 2019. A full replacement is



therefore deemed necessary in order to accommodate the traffic load and to adapt to the increasingly intensified river flows during raining season due to climate change. As shown in **Figure 5**, the new Usa Bridge will be located at the exact same location as the existing bridge, and therefore expecting minor impacts to the environmental and social footprint.

Figure 3: Design for the Replacement of Usa Bridge (No.2)



Source: VCRTP PIU/PST

29. Engineering approach for Adson Bridge (No.6) and Wailapa Bridge (No. 9) has been also revised by the detailed design to address the identified road safety concerns. With their respective lengths of 40m and 60m and high elevations, the existing Adson Bridge and Wailapa Bridge with a single lane and no footpath have proven dangerous to pedestrians. Some incidents were reported which exemplify the risks to which school children from nearby local communities are exposed to when using these bridges on their way to and from school. The site investigations for detailed design and the road safety audit for design pointed out that the existing bridges would be unacceptable from a road safety point of view because there will be an increase in traffic volume and speed, and likely an increase in the size of trucks travelling the road. Therefore, a 1.5m-wide pedestrian footpath will be attached to the existing Adson Bridge and Wailapa Bridge. The building footprint remains entirely included in the RoW and therefore no land acquisition is required.

Financing Cost Overruns for Culverts, Drainage, and Slope Protection Works (US\$ 1.35m)

30. The AF will also be used to finance cost overruns for other ancillary structures for improving climate resilience of the project roads. As the design was refined with engineering surveys, the actual quantity required for these climate resilient measures has been revised upwards. The AF will finance the associated US\$0.15m cost overrun for culverts and about US\$1.2m for slope stabilization structures, both were included in the original detail of the project.



Financing Cost Overruns for Procuring More Bailey Bridges (US\$ 1.18m)

31. About US\$1.18m of the AF will be used to procure more Bailey bridges for traffic diversion and emergency response during the project construction period. Compared with the appraised amount in 2019, additional Bailey bridges with a total length of 140m need to be procured based on the site survey in 2021. This is mainly because the conditions of several existing bridges have worsened considerably after Cyclone Harold compared with in 2019. Their structural stability is no longer safe for transporting heavy construction materials and equipment that the project needed across the project road. Therefore, additional Bailey bridges are needed to facilitate the constructability of the project roads and bridges.

Financing Gaps for Other Costs (US\$ 8.58m)

32. The remaining amount of the AF will be used to cover the financing gaps for other works such as earthworks (cutting and embankments), relocating underground water pipes and electric lines affected by the road works, and ancillary works such as road signs, markings, and speed humps to improve safety. The cost of these works was not estimated at project appraisal because the quantities required could not be estimated before the engineering surveys carried out during the detailed design. Therefore, the financing gap is substantial. The costliest item under this category are earthworks, accounting for about **US\$4.76m**, and ancillary works related to road safety (road signs and markings), accounting for about **US\$2.5m**.

E. Implementation

33. The implementation arrangement remains the same as the parent project VCRTP. Minister of Finance and Economic Management is the Recipient's Representative, and the Ministry of Infrastructure and Public Utilities (MIPU) is the Implementing Agency of the project.

34. Figure 4 illustrates the implementation arrangements for VCRTP.

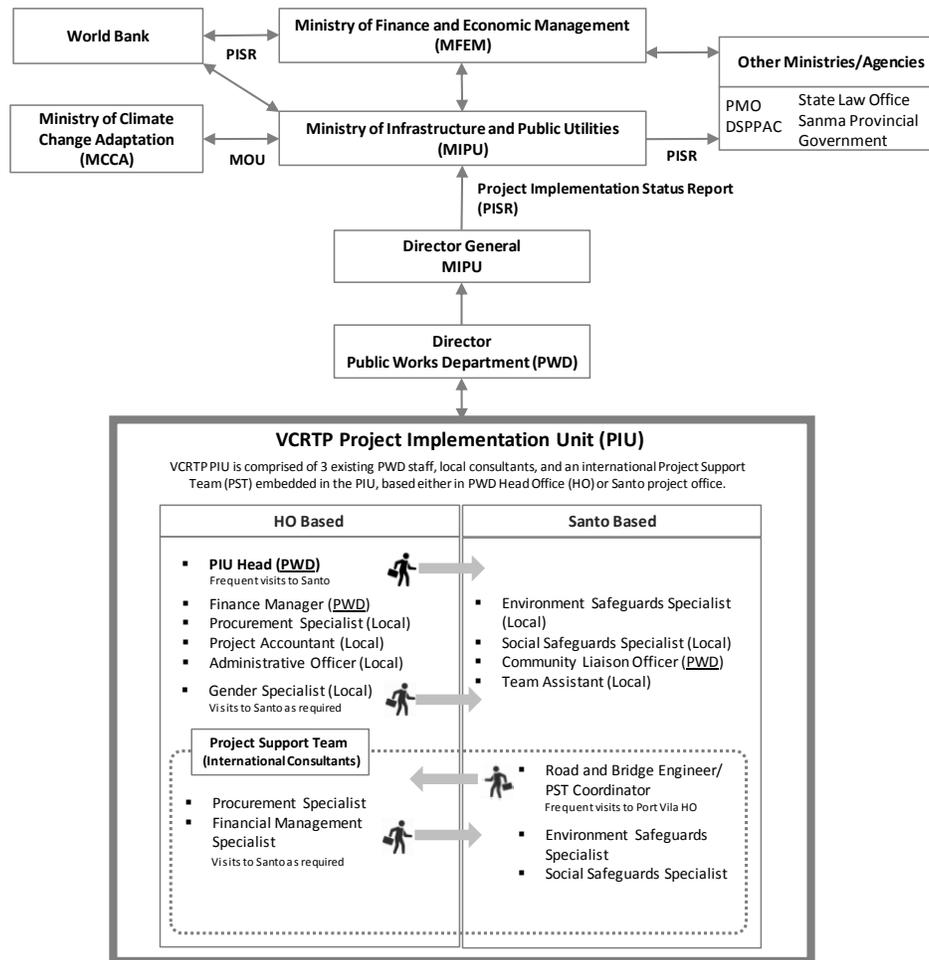


Figure 4: Implementation Arrangement under VCRT and AF

35. A PIU has been established within PWD to implement the project. The PIU Head is the PWD Deputy Director who has experience in project management of World Bank and/or other donor funded projects. The PIU Head is being supported by a Road and Bridge Engineer/PST Coordinator (see the following paragraph for details). The other members of the PIU include current PWD staff, local consultants on contract to PWD and the international consultants that make up the PST. As per the implementation arrangement, the PIU shall include: a Finance Manager (PWD staff), two Procurement Specialists (one international, one local), two Environmental Safeguards Specialists¹⁶ (one international, one local), two Social Safeguards Specialists (one international, one local), a Gender Specialist (local),¹⁷ a Community Liaison Officer (PWD staff), an FM Specialist (international), Project Accountant (local), Administrative Officer (local), and a Team Assistant (local).¹⁸

¹⁶ It is proposed that the Environmental Safeguards Specialists is also responsible to support climate change-related project elements.

¹⁷ The Gender Specialist (with GBV/VAC and workplace experience) supports MIPU-PWD to implement the GAP and GBV/VAC Strategy.

¹⁸ The PWD members of the PIU are current staff. The local specialist consultants are currently working on similar projects on contract to PWD. The international consultants will be contracted for VCRT to the extent possible from consultants currently working on VIRIP or other projects in Vanuatu.



36. Five international specialists embedded in the PIU form a PST to work with the other members of the PIU and support MIPU-PWD in the implementation of the project. They include: (i) a Road and Bridge Engineer/PST Coordinator; (ii) a Procurement Specialist, (iii) an FM Specialist; (iv) an Environmental Safeguards Specialist, and, (v) a Social Safeguards Specialist. Other than the Social Safeguards Specialist, these are the minimum personnel which must be in place when the PST is established. The role of the international specialists will be to provide (with other PIU members) project operational support to MIPU-PWD, capacity development to the other PIU members, and technical assistance on system development. Some of these international specialists (as well as specialists providing support in other areas such as Monitoring and Evaluation - M&E), may provide inputs on an intermittent basis and be shared with other projects funded by the World Bank or other development partners. Most PST specialists are located at an office at Luganville on Santo. Office space is being provided in an existing government office. To ensure the most effective and efficient delivery of the project, it is anticipated that PIU staff will need to travel between Luganville and Port Vila on a regular basis for meetings. The cost of these trips is covered by the operating costs associated with the implementation of the project.

37. As of October 2021, the PIU has filled nine key positions, including four international specialists for the PST to assist with technical aspects related to road and bridge engineering, procurement, environmental and social safeguards. The PIU is in the process of completing the recruitment process for six other positions, including the international Financial Management Specialist and the Community Liaison Officer (Table 5).

Table 5: Key PIU/PST Positions Filled and Under Mobilization Process as of September 2021

Position Filled		Positions Under Mobilization Process	
1	Head of the PIU	1	Community Liaison Officer (PWD staff)
2	Deputy Head of the PIU	2	Environmental Safeguard Specialist (National)
3	Finance Manager (PWD staff)	3	Social Safeguard Specialist (National)
4	Project Accountant (National)	4	Financial Management Specialist (International)
5	International Road and Bridge Engineer/PST Coordinator	5	Gender Specialist (local)
6	Procurement Specialist (International)	6	Team Assistant and administrative officer
7	Procurement Specialist (National)		
8	Environmental Safeguard Specialist (International)		
9	Social Safeguard Specialist (International)		

38. **A Project Operations Manual (POM)** is being finalized to guide all VC RTP stakeholders, particularly implementing agencies, in the management of project activities. It includes details on institutional roles and responsibilities for safeguards procedures, M&E, contract management and scheduling. It sets out the format for and provides guidance on writing the monthly and quarterly Project Implementation Status Reports. It describes the operating principles for decision making. The FM Manual, Procurement Plan, Environmental and Social Management Plan (ESMP), GAP and GBV/VAC Strategy are attachments to the POM.

39. An annual work plan and budget shall be submitted to the World Bank no later than 6 months from the Effective Date and July 31 of each subsequent year of the implementation of the project. The 2021 Annual Work Plan and Budget for the Project was cleared by the Bank on May 21, 2021. Work plan, financing plan and budgeting plan has been monitored on quarterly basis by the PIU.



40. Project M&E is the responsibility of the PWD PIU, which is responsible for preparing project reports for each month and quarter, supported by the PST and the M&E Specialist in the MIPU's Corporate Services Unit. These quarterly reports will be submitted to DG MIPU for review and then transmitted to MFEM for checking compliance with the World Bank requirements before submission by MFEM to the World Bank within 45 days after the end of the quarter. These reports will track progress in terms of distribution of inputs, disbursement of funds, and achievement of targeted indicators as outlined in the Results Framework (Section VI). The key instrument for evaluating VCRTP will be the indicators identified within the Results Framework.

41. MCCA will be supporting MIPU with the climate change aspects of the project, including the collection, analysis and sharing of data and in the development of a disaster response and recovery mechanism for the road sector. MIPU (PWD) is currently (as of September 2021) in process of establishing a memorandum of understanding (MOU) with MCCA (VMGD/NDMO) as required in the project's legal covenant. MCCA has done for inter-ministerial collaboration on other climate change initiatives, including under an ongoing GCF-funded Climate Information Services for Resilient Development Project to improve the use of climatic information service for key sectoral planning.¹⁹ It is noted that there is an existing MOU between departments within MCCA and MIPU under the GCF-funded project. The ongoing GFDRR-funded RTSIDS will also provide recommendations and data to inform activities to be implemented under VCRTP. A CERC Operations Manual (OM), harmonized wherever reasonable with the CERC OM for VIRIP, is being prepared to assist in the implementation of Component 4. The CERC OM must be adopted before implementation of contingent emergency response activities under Component 4.

F. Project location and Salient physical characteristics relevant to the safeguard analysis (if known)

The project is located on Santo Island in Sanma Province. South Santo Road starts at Luganville, Vanuatu's second largest city, and runs along the lowland area of the south coast before turning inland. The road goes west through more hilly terrain before reaching Tasiriki on the south west corner of the island. The road crosses several rivers that have their origins in the highlands to the north. Santo's shape with two northward extending peninsulas means that most rivers have small catchments. The south-easterly trend in drainage pattern is controlled by prominent features of the mountain ranges. Rivers draining the south of the island have extensive lowland valley sections, with meandering alluvial channels that have built floodplains and terraces comprising fine sediments. Navaka is an example of a braided river. It consists of numerous wide, shallow and fast-flowing sediment transporting channels that subdivide and re-join repeatedly around bars and islands, forming an intertwining structure. The key features of sediment deposition in the river system include: (i) the steep upland slopes encourages active erosion of gravel; (ii) regular earthquakes have triggered many landslides in the highlands providing sources of fresh sediments; (iii) the regular passage of tropical cyclones produces large and powerful river floods; and, (iv) marine gravels underlie much of the lower basin, the exposure and reworking of which has provided abundant coarse gravels to form the channel bars and braid islands in between the shifting channels. The project alignment traverses through land that is under customary land ownership. Vanuatu is an ethnically diverse country with 113 indigenous languages being used. In Vanuatu, all land access and public infrastructure works consider the fundamental right that under the nation's constitution all land in Vanuatu belongs to the indigenous custom owners and their descendants. Roads often also sit within a complex social structure and

¹⁹ The accredited entity for the work is the Secretariat of the Pacific Regional Environment Programme (SPREP).



environment as they run through villages and provide access to shared natural resources, which in turn require development projects to be cognizant of the way in which benefits and costs of the respective communities are perceived and addressed. This is particularly the situation in Melanesia more generally including in Vanuatu. The key to managing these risks is meaningful consultation and citizen engagement throughout the project cycle.

G. Environmental and Social Safeguards Specialists on the Team

Vivianti Rambe, Environmental Specialist
Craig Andrew Clark, Social Specialist
Rachelle Therese Marburg, Social Specialist
Rosemary Alexandra Davey, Environmental Specialist

SAFEGUARD POLICIES THAT MIGHT APPLY

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	
Performance Standards for Private Sector Activities OP/BP 4.03	No	
Natural Habitats OP/BP 4.04	Yes	
Forests OP/BP 4.36	No	
Pest Management OP 4.09	No	
Physical Cultural Resources OP/BP 4.11	No	
Indigenous Peoples OP/BP 4.10	Yes	
Involuntary Resettlement OP/BP 4.12	Yes	
Safety of Dams OP/BP 4.37	No	
Projects on International Waterways OP/BP 7.50	No	
Projects in Disputed Areas OP/BP 7.60	No	



KEY SAFEGUARD POLICY ISSUES AND THEIR MANAGEMENT

A. Summary of Key Safeguard Issues

1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts:

Similar to the parent project (VC RTP), the VC RTP- AF is a category B project under the World Bank Safeguards Policy. Activities and investments are not likely to cause significant or irreversible environmental impacts, or negative social impacts. Potential environmental and social (E&S) impacts can be mitigated.

The E&S safeguards profile, potential impacts, and management approach for the AF remain the same. Location and type of infrastructure to be built remain the same as previously assessed by the existing Environmental and Social Impact Assessment (ESIA) and Abbreviated Resettlement Action Plan (ARAP) under the parent project VC RTP. The additional works (listed below) will use the same construction facilities and type of materials as the ones prepared for VC RTP. Additional quantity of construction materials will be needed. Existing ESIA has covered safeguards management approach for aggregate materials sourcing. The change of engineering approach applies to the following:

(1) Improving 5km pavement work within the existing length / network of the South Santo Road that the project is supporting. The 5km pavement works is within the original project scope that the existing ESIA and ARAP have covered. No additional E&S impacts / risks are expected.

(2) Usa Bridge: A replacement instead of repairing existing bridge. Construction materials will be the same as the other new bridges along the South Santo Road. Method of works will be different from the original design. The E&S impacts are expected to be minor (e.g., increased runoff, waste management from demolished bridge, etc.), localized and short term (limited to construction stage). ESIA will be updated and provide detailed assessment.

(3) Adson and Wailapa Bridges: Adding pedestrian footpath (1.5km wide) within the existing Right of Way (ROW). No additional E&S impacts / risks are expected.

In terms of involuntary resettlement, there is no change in expected project footprint compared to when the ARAP was prepared for the parent project. Severe impacts in terms on displacement of housing or severe loss of productive resources are not anticipated. While impacts are not expected in relation to the surfacing of existing roads, due diligence during ARAP updating will reassess this and apply ARAP entitlements as needed. The surfacing on the 5km within the South Santo Road network does not divert from this approach.

The DSC is currently in the process of updating the E&S safeguards instruments (ESIA, ESMP, and ARAP) as part of due diligence of the original project VC RTP to reflect information that had become available from detailed surveys and designs, including (a) updates in scope of works based on up-to-date asset conditions, and (b) potential laydown areas, and aggregate materials sourcing. The updated safeguards instruments will also incorporate the proposed changes of engineering approach under the AF. The updated instruments will be reviewed and cleared by the World Bank, and re-disclosed in country and on the World Bank's external website by end of January 2022.

A Grievance Redress Mechanism (GRM) is to be fully operationalized, pending mobilization of the project's Community Liaison Officer (CLO) which is expected to be on board by end of October 2021. Currently operating GRM is for the whole ministry. The assigned CLO, once appointed, will immediately take required actions starting in November 2021



to bring the GRM to full operationalization as part of the risk management plan for the project. The CLO will focus on training responsible persons, setting up logging and tracking systems and disseminating information regarding the GRM to make it accessible.

2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area: Similar to the parent project VCRTTP, potential long-term impact due to anticipated future activities under VCRTTP-AF is related to climate vulnerability. Vanuatu, like many other Pacific nations, are already experiencing the effects of increased temperatures and rising sea level. Climate change projections for 2030, 2055 and 2090 were reviewed by the Pacific Climate Change Science Program to determine the most plausible representations of future climate in the Pacific. The program makes the following climate change predictions for Vanuatu: increases in temperatures, more very hot days – increases in average temperatures will also result in a rise in the number of hot days and warm nights and a decline in cooler weather, changing rainfall patterns – projections generally suggest a decrease in dry season rainfall and an increase in wet season rainfall, more extreme rainfall days, and less frequent but more intense tropical cyclones.

The projected design life for the tar sealing is 10 to 15 years for South Santo Road, and the concrete road surfaces is 25 to 30 years. Therefore, the climate change projections for 2055 best reflect the scenario that the entire investment most adequately. Along the length of the road, the majority of runoff from rain events goes to natural soakage and this does have implications for localized flooding depending on impermeable surfaces and the ability of the rainfall to percolate into the ground. Detailed design work may require flood hazard modelling and this should allow for predicted changing rainfall patterns.

South Santo Road is mostly coastal; therefore, the proposed design solution will consider the likely future impact on the coastline where it runs along South Santo Road and suggest design solutions which provide climate resilience.

3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts. Without upgrade and sealing work to South Santo Road to provide sealed and uninterrupted access between Luganville and Tasiriki (including all river crossings), the communities of south and west Santo will continue to suffer from periods of time where they are unable to travel the road and will remain cut off from the main urban, administrative and economic center of Santo. Economic and social development of the southern and western areas is dependent on that access to Luganville (and beyond via the airport and port). Without the VCRTTP works, this development will be hampered and extremely difficult in the face of increasing impacts from climate change. The 'No Project' option is not considered to be a viable alternative.

4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described. The implementation arrangement remains the same as the parent project VCRTTP. The Ministry of Public Utilities (MIPU) is the implementing agency of the project. Public Works Department (PWD) within MIPU is responsible for the road network, staffed with 153 personnel of which 31 are based at the Head Office in Port Vila and 122 are spread across the six PWD's provincial divisions.

Safeguards performance of the parent project VCRTTP has been Satisfactory. MIPU-PWD has assigned sufficient staff with clear responsibilities who are well engaged and knowledgeable, and fully responsible in following up on safeguards issues.



The Government of Vanuatu (GOV) has delegated the delivery and management of VCRTTP and the AF to a dedicated Project Implementation Unit (PIU) within MIPU-PWD which has been resourced with personnel specifically tasked to manage project implementation. As such, the PIU carries much of the institutional capacity required by GOV to implement the project and to monitor the works for compliance. The PIU is currently in the process of hiring the following resources: a National Environmental Safeguards Specialist, a National Social Safeguards Specialist, a National Gender Specialist and a Community Liaison Officer. These E&S resources will be based at Luganville on Santo once construction commences.

A Project Support Team (PST) has been established and embedded in the PIU to support MIPU in the implementation of the project. The team consists of international specialists: a Procurement Specialist, an Environmental Safeguards Specialist, a Social Safeguards Specialist, and an FM Specialist. The role of the international specialists is to provide project operational support to MIPU-PWD, capacity development to the other PIU members and technical assistance on system development. The environmental and social safeguards specialists (international and national) of PIU/PST are responsible for the overall performance of the project's safeguards implementation ensuring that the World Bank's safeguards policies as well as the GOV regulations are adequately met.

PIU has hired a Design and Supervision Consultant (DSC) to finalize detailed design and conduct supervision of civil works. DSC has mobilized its team to Vanuatu in January 2021. DSC team includes a safeguards specialist. Currently, the safeguards specialist's contract only covers inputs at 2 months intermittent over a 6 months period. This provision is considered inadequate and will need to be substantially increased. It was agreed during VCRTTP ISM (May 2021) that the TORs for the E&S safeguards specialists will be revisited; ensuring that required works to meet the World Bank's Safeguards Policies as well as GOV regulations are adequately met.

Successful implementation of the project will depend, among others, on the effective implementation of the environmental and social management measures outlined in the ESMP. Training and capacity building will be necessary for the key stakeholders in order to ensure effective implementation of the ESMP. List of capacity building and budget provision has been identified by PIU and included in the ESIA and ESMP; which include: (i) Awareness-raising: for stakeholders who need to appreciate the significance/relevance of environmental and social issues throughout the project life cycle; (ii) Sensitization: for stakeholders that need to be familiar enough with the issues so that they can make informed and specific requests for technical assistance and (iii) Technical training: for stakeholders who will need to use the ESMP tools, analyze potentially adverse environmental and social impacts, to prescribe mitigation approaches and measures, and to prepare and supervise the implementation of management plans.

It is the responsibility of the Contractor to ensure that all workers have sufficient technical training to be able to implement the provisions of the ESMP through their CESMP. The Contractor is to ensure that they have the budget provision to conduct identified training for their workers and that sufficiently skilled resources are made available to deliver the relevant training.

5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.

The key stakeholders are: (i) those in close proximity to South Santo Road, including traditional leaders, chiefs, customary land owners, small business holders/market stall holders and others; and, (ii) those living on Santo, especially the communities along the project road. A community consultation plan is included; outlining guidelines for public disclosure and engagement in project preparation and implementation.



A Stakeholder Engagement Plan has been prepared to guide the project in its consultation and communication requirements through various phases of the project design and implementation. Modes of consultation, information dissemination and disclosure include public consultation meetings, specific group/individual consultations, public media including newspapers, radio and notice boards.

B. Disclosure Requirements (N.B. The sections below appear only if corresponding safeguard policy is triggered)

Environmental Assessment/Audit/Management Plan/Other		For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors
Date of receipt by the Bank	Date of submission for disclosure	

"In country" Disclosure

Resettlement Action Plan/Framework/Policy Process	
Date of receipt by the Bank	Date of submission for disclosure

"In country" Disclosure

Indigenous Peoples Development Plan/Framework	
Date of receipt by the Bank	Date of submission for disclosure

"In country" Disclosure

C. Compliance Monitoring Indicators at the Corporate Level (to be filled in when the ISDS is finalized by the project decision meeting) (N.B. The sections below appear only if corresponding safeguard policy is triggered)



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APPROVAL

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