

**PROJECT INFORMATION DOCUMENT (PID)**  
**APPRAISAL STAGE**

Report No.: PIDA569

<b>Project Name</b>	Enhancing the Climate Resilience of the West Coast Road (P126504)
<b>Region</b>	EAST ASIA AND PACIFIC
<b>Country</b>	Independent State of Samoa
<b>Sector(s)</b>	Rural and Inter-Urban Roads and Highways (85%), General transportation sector (15%)
<b>Lending Instrument</b>	Specific Investment Loan
<b>Project ID</b>	P126504
<b>Borrower(s)</b>	Ministry of Finance
<b>Implementing Agency</b>	Land Transport Authority
<b>Environmental Category</b>	B-Partial Assessment
<b>Date PID Prepared</b>	February 13, 2013
<b>Date of Appraisal Completion</b>	October 19, 2012
<b>Date of Board Approval</b>	December 18, 2012

## I. Project Context

### Country Context

The Independent State of Samoa (Samoa) is a small remote Pacific Island state with a population of about 180,000 people. It is approximately 3,000 km from New Zealand, and 4,000 km from Hawaii and Australia. Samoa is one of the wealthier and stronger performing Pacific island countries with an average gross national income of around US\$3,000 per capita. The economy has grown strongly since the early 1990s, underpinned by a stable macro-economic environment and a business-friendly investment climate. The country is broadly on track to meet the Millennium Development Goals (MDGs) for health and education. However, Samoa's small size and remoteness mean the economy is narrowly based, highly reliant on external factors, including donor assistance, and vulnerable to external shocks and natural disasters. A series of recent shocks have dealt the Samoa economy major setbacks. As a result of the spike in food and fuel prices, the global slowdown, and the 2009 tsunami (which destroyed around 20 percent of tourist room capacity, and caused damage and losses equivalent to more than 30 percent of gross domestic product (GDP)), the Samoa economy contracted by over five percent in 2009. Economic activity has started to bounce back, but the economy remains fragile. A major challenge for Samoa is ensuring that climate change does not reverse the country's hard won development gains, worsening the plight of the most vulnerable sections of the community.

As a small developing island state, Samoa's vulnerability to climate change is high, and growing. The latest information from the Pacific Climate Change Science Program<sup>1</sup> indicates

<sup>1</sup> "Climate Change in the Pacific: Scientific Assessment and New Research, Volume 2: Country Reports," Pacific Climate Change Science Program, 2011.

that the frequency and intensity of extreme weather and climate events (such as heavy rainfall, strong winds, storm surges, and high sea levels) is already on the rise throughout the region. In the past, these and other events, such as tsunamis, have caused severe damage to infrastructure and other economic assets, and had adverse effects on livelihoods. For example, it is estimated that Cyclone Ofa (1990) and Cyclone Val (1991) caused combined damage to assets and production valued at 2.5 to 3 times GDP. These impacts and their negative consequences are projected to escalate in the near and longer terms as a result of climate change. In particular, tropical cyclones and the associated heavy rain and storm surges are expected to become more intense. Approximately 80 percent of the Samoa coastline is rated as sensitive or highly sensitive to erosion, flooding and landslip.

The Government of Samoa (GoS) is aware that the country's infrastructure assets are vulnerable to climate change and is acting accordingly. It is very active in regional and global climate change forums and initiatives and has put forth a robust program for developing economic infrastructure, which addresses risks posed by climate change. In addition, Samoa was a case study country for the World Bank-sponsored *Economics of Adaptation to Climate Change* study (2010), and was the first country in the Pacific regional program of the Pilot Program for Climate Resilience (PPCR) to have an endorsed *Strategic Program for Climate Resilience (SPCR)*. PPCR is the first program developed and made operational under the Strategic Climate Fund (SCF), which is one of two funds within the design of the Climate Investment Funds and would provide most of the funding for this project.

## **II. Sectoral and Institutional Context**

Samoa's road network is of critical importance to the country's economic development. It provides for the day-to-day well-being of its people by increasing their access to economic activities and social services. Approximately 70 percent of Samoa's population lives within one km of the coast, and critical infrastructure, such as hospitals, schools, places of employment, tourist infrastructure, port facilities, power plants, airports, and roads, is located primarily in the coastal zone. Expected climate change effects - the combination of rising sea level and more intense tropical cyclones - place these coastal infrastructure and communities at high risk.

The Samoa road network faces a range of vulnerability issues, in particular: (i) coastal exposure to sea-level rise, storm surge, wave action during cyclones and tsunamis; (ii) inland flooding and landslips during extreme rainfall events; (iii) damage from earthquakes; and (iv) accelerated pavement deterioration due to extreme weather and rising water tables in some locations. The West Coast Road (WCR) is the primary artery on the main island of Upolu and provides a vital land transport link connecting Samoa's capital city Apia and the Port of Apia with Faleolo International Airport, the Mulifanua inter-island ferry wharf (the main gateway to Samoa's second island, Savai'i), and communities and industry along the north-west coast. Its upkeep is critical for continued economic development as more than 50 percent of Samoa's population and most of its industry is currently located along the WCR corridor. Accordingly, the GoS has identified the WCR as a key national infrastructure asset and investment priority in the *Strategy for Development of Samoa 2012 to 2016*, and the *Samoa Infrastructure Strategic Plan*. In addition, the need to protect and enhance vulnerable coastal infrastructure is identified as a priority activity of the Samoa National Adaptation Program of Action.

The WCR follows, and in places, is immediately adjacent to, the coast. In some locations the road is within five meters of the water, and more than 50 percent of the WCR is less than three meters above mean sea level, with approximately 10 percent less than two meters. It is vulnerable to high rainfall events (leading to surface flooding, deterioration of the road surface and road closures), and extreme high sea levels (for instance during severe tropical storms) that can lead to accelerated erosion of the

road profile, structural damage and road closures. In addition, the road surface is at risk, particularly at its eastern end, by a high water table, which exacerbates deterioration of the road pavement. The existing carriageway is two-lane, generally seven meters wide, with unsealed (or very narrow) road shoulders. It has numerous culverts, no major bridges, and a sealed bituminous surface in varying condition. For almost half of its 30 km length, the condition of the WCR is rated as poor to fair.

The Government is developing a systematic approach to strengthen the WCR's resiliency to climate change and to build an overarching adaptation strategy for the entire Samoa road network. One of the main components of its strategy - relocating the WCR further inland - is the long-term solution in response to the threat that rising sea levels, which after several decades, may eventually submerge the WCR. While the relocation of the WCR inland has been shown to be economically feasible and is likely to be necessary in the long-term, it is not practical in the short- to medium-term for several reasons. First, it is unlikely that the existing road would be submerged by rising sea levels within its 25-year upgraded design life. This is according to Samoa's Second National Communication to the United Nations Framework Convention on Climate Change, which indicates sea level rise of 36 cm by 2050. Second, a detailed feasibility study carried out under the World Bank-funded Second Infrastructure Asset Management Project (SIAM-2) has shown that constructing a new inland route would be an extremely expensive option, and given the country's commitment to reduce the fiscal deficit (as noted in the 2012 Country Partnership Strategy), the inland route would only be considered as a long-term solution, since rehabilitating the existing WCR is a viable option for the short- to medium-term. Third, relocating the WCR further inland would involve complex land issues that would cause significant delays requiring several years to resolve.

Given the critical importance of the WCR to the country's economic development and the constraints noted above, the Government plans to rehabilitate and enhance the WCR's resiliency to climate change over the next 30-year timeframe, or until around 2040. Furthermore, GoS plans to prepare a detailed assessment of vulnerabilities in road transport and develop a strategy for enhancing the climate resilience of the overall network for the same time-frame. GoS is working with donors to support its climate change initiatives and has requested the Bank's assistance through the Enhancing the Climate Resilience of the West Coast Road Project (CRWCR), which will be the first of two projects for Samoa under the PPCR. Other aspects of coastal resilience will be addressed under a second PPCR project, which will adopt a "ridge to reef" approach and focus on enhancing climate resilience and the capacity of natural systems and coastal communities to adapt to climate change.

The Bank has a long and successful history of engagement with the GoS in strengthening road sector infrastructure, and in responding to and building resilience against natural disasters. Over the last ten years, the SIAM program has supported reforms in road maintenance and management arrangements, including the establishment of a Land Transport Authority (LTA), which will be the implementing agency for this project, and with major road rehabilitation projects. The Bank previously worked with the GoS under the Cyclone Emergency Recovery Project supporting the recovery from Cyclone Heta and reducing coastal vulnerability. Bank support to GoS in the transport sector includes: (i) a successful program of contracting out road maintenance to the private sector; (ii) upgrading Vaitele Street, which is an extension of the WCR into urban Apia; and (iii) upgrading road infrastructure along affected areas of the 2009 tsunami. The combination of completed and planned upgrading of Vaitele Street under SIAM-2, and the proposed rehabilitation and enhancing of the WCR's resiliency to climate change under this project, will contribute to a high quality, climate-resilient road link that will serve as the backbone of land transport in Samoa.

### III. Project Development Objectives

The project development objectives of the Enhancing Climate Resilience for West Coast Road Project are to: (i) improve the climate resilience of the West Coast Road; and (ii) enhance local capacity to develop a more climate resilient road network.

### IV. Project Description

#### Component Name

1. Improving the Climate Resilience of the West Coast Road. This component will implement measures to strengthen the climate resilience of the economically critical WCR. Proposed works will improve the road pavement between Vailoa Junction in Apia and Faleolo International Airport (approximately 26 km) by raising and strengthening vulnerable sections of the WCR, sealing shoulders, and improving longitudinal and cross drainage.
2. Vulnerability Assessment of the Samoa Road Network. Technical assistance will assess the climate change vulnerability of the main road network on the two principal islands of Upolu and Savai'i, and prepare a climate resilience/adaptation strategy for the road network.
3. Project Management and Operating Costs. Support will be provided to assist with project implementation.

### V. Financing (in USD Million)

For Loans/Credits/Others	Amount
Recipient	2.22
Strategic Climate Fund-PPCR Grant	14.80
Total:	17.02

### VI. Implementation

The CRWCR, which consists primarily of large road works, will be implemented by the LTA. It is expected that the project will be implemented between March 1, 2013 and February 28, 2018.

### VII. Safeguard Policies (including public consultation)

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	X	
Natural Habitats OP/BP 4.04		X
Forests OP/BP 4.36		X
Pest Management OP 4.09		X
Physical Cultural Resources OP/BP 4.11		X
Indigenous Peoples OP/BP 4.10		X
Involuntary Resettlement OP/BP 4.12	X	
Safety of Dams OP/BP 4.37		X
Projects on International Waterways OP/BP 7.50		X
Projects in Disputed Areas OP/BP 7.60		X

## **VIII. Contacts**

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