

Validation Report
June 2021

Tonga: Tonga–Fiji Submarine Cable Project

Reference Number: PVR-791
Project Number: 44172-022
Grant Number: 0256



Raising development impact through evaluation

ABBREVIATIONS

ADB	– Asian Development Bank
Digicel	– Digicel Tonga
DMF	– design and monitoring framework
EIRR	– economic internal rate of return
EMP	– environmental management plan
FIRR	– financial internal rate of return
ISP	– internet service provider
ICT	– information and communication technology
Mbps	– megabits per second
MEIDECC	– Ministry of Meteorology, Environment, Information, Disaster Management, Climate Change and Communications
MFNP	– Ministry of Finance and National Planning
PCR	– project completion report
PRCP	– Pacific Regional Connectivity Program
TA	– technical assistance
TCC	– Tonga Communications Corporation
TCL	– Tonga Cable Limited
WACC	– weighted average cost of capital

NOTE

In this report, “\$” refers to United States dollars.

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PROJECT BASIC DATA

Project number	38347-022	PCR circulation date	Dec 2020	
Grant number	0256	PCR validation date	Jun 2021	
Project name	Tonga–Fiji Submarine Cable Project			
Sector and subsector	Information and communication technology (ICT)	ICT infrastructure—ICT strategy and policy, and capacity development		
Strategic agenda	Inclusive economic growth Regional integration			
Safeguard categories	Environment	B		
	Involuntary resettlement	C		
	Indigenous peoples	C		
Country	Tonga	Approved (\$ million)	Actual (\$ million)	
ADB financing (\$ million)	ADF: 32.80	Total project costs	32.80	28.60
	OCR: 0.00	Grant	9.70	9.70
		Borrower	6.60	4.20
		Beneficiaries	0.00	0.00
		Others	0.00	0.00
Cofinancier		Total cofinancing World Bank	14.69	14.69
Approval date	23 Aug 2011	Effectiveness date	8 Dec 2011	21 Dec 2011
Signing date	9 Sep 2011	Closing date Financial closing	31 Dec 2016	31 Dec 2018 11 Nov 2019
Project officers	H. Van Rijn M. Paniagua V. Narayan A. Cerelala	Location ADB headquarters SPSO SPSO SPSO	From Jul 2011 Nov 2012 Dec 2014 Apr 2019	To Nov 2012 Dec 2014 Apr 2019 Dec 2020
IED review director	N. Subramaniam, IESP			
Team leader	M. Legal, Senior Evaluation Officer, IESP*			

ADB = Asian Development Bank, ADF = Asian Development Fund, IED = Independent Evaluation Department, OCR = ordinary capital resources, PCR = project completion report, SPSO = South Pacific Subregional Office

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I. PROJECT DESCRIPTION

A. Rationale

1. In 2011, Tonga had a total population of 103,252, of which 73% lived in Tongatapu where the capital city of Nuku'alofa is located.¹ Tonga has a limited resource base and a small export market focused on fisheries, agriculture, and tourism. Tonga's distance from large markets poses a significant constraint. Hence, improved access and more affordable telecommunications such as high-speed (broadband) internet could offer new economic opportunities, improve disaster risk management, facilitate connections to larger markets, and open up new avenues for service delivery.

2. Tonga was the first in the Pacific region to liberalize its telecommunication sector, resulting in one of the lowest retail tariffs in the region for voice services and the highest mobile service

¹ Statistics Department, Tonga. 2013. *Tonga 2011 Census of Population and Housing, Volume 1: Basic Tables and Administrative Report*. Nuku'alofa.

penetration of about 60%.² However, broadband internet access and penetration remained low at 2.5%, mainly due to the high cost and poor performance. These resulted in congestion as Tonga was totally dependent on satellite connectivity, which was insufficient to meet existing and growing bandwidth demand. With only two active operators in the industry, the Tonga Communications Corporation (TCC) and the Digicel Tonga (Digicel) both provide internet plans ranging from 128/64 kilobits per second (kbps) to 512/128 kbps. In 2010, the World Bank estimated Tonga's bandwidth demand at 1.243 gigabytes per second by 2032. To meet this demand, a significant improvement in internet access and a lower international connectivity cost were needed.

3. In 2011, the Asian Development Bank (ADB) approved a grant of \$9.7 million for the Tonga–Fiji Submarine Cable Project to provide substantial higher initial capacity of 10 gigabytes per second and reduce international connectivity costs by more than 60%. With a total project cost of \$32.8 million, the World Bank approved a grant of \$16.5 million, while the Tonga Cable Limited (TCL) provided the remaining \$6.6 million.³ Both grants were channeled by the government to TCL through issuance of shares in TCL's capital. Given the huge capital investment and meager private sector contribution, the Government of Tonga considered the project a public investment. The project aimed to support the development and operation of the submarine communication cable system linking Tonga to Fiji where an existing international submarine cable network was to give onward access to the world. The project was the first phase of the Pacific Regional Connectivity Program (PRCP) led by the World Bank.⁴

B. Expected Impacts, Outcomes, and Outputs

4. The expected impact of the project was a widely available and affordable information and communication technology (ICT) services for improved economic performance and public service delivery in Tonga. The envisaged outcome was for the population of Tonga to have access to good quality and affordable broadband internet services. The intended project outputs at appraisal were establishment and efficient operation of the Tonga submarine cable system by TCL and efficient and effective project management services by TCL. Due to significant savings incurred, one output indicator was added to reflect the establishment and operation of a 435-kilometer domestic repeaterless submarine cable linking Vava'u and Ha'apai to Nuku'alofa.⁵ The rest of the information in the design and monitoring framework (DMF) at appraisal remained the same.

C. Provision of Inputs

5. The grant was approved in August 2011 and became effective in December 2011. The closing date in June 2016 was extended to December 2018 mainly to construct the domestic

² ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to Tonga for the Tonga–Fiji Submarine Cable Project* (accessible from the linked document on Sector Assessment (Summary): Information and Communication Technology). Manila.

³ TCL is a company established in 2009 to develop submarine cable options for Tonga, with 80% owned by the government and 20% by TCC. Since TCL will be the sole wholesaler of the cable capacity to the retail service providers, there was a need to develop a telecommunication policy and legal regulatory framework environment for internet access and e-transactions, for which the World Bank provided a technical assistance (TA).

⁴ The World Bank was the lead agency for this project given its extensive experience and expertise in the ICT sector (PCR, para. 4). The PRCP aims to connect Tonga, Samoa, Solomon Islands, and Vanuatu by submarine fiber optic cables to the existing global submarine cable network.

⁵ A minor change in scope approved in May 2017 mentions a revision in the DMF approved in December 2016. The 2016 memo was not available to IED, but the 2017 memo shows the revised DMF.

cable connection in addition to the original international cable, which was completed and commissioned in 2013. The project was closed on time and financially closed in November 2019.⁶

6. At appraisal, the project cost was \$32.8 million, 30% of which was from ADB, 50% from the World Bank, and 20% from TCL. After the completion of the international cable system in 2013, the project had a savings of \$4.5 million, of which \$2.3 million was from ADB. Since the additional cable construction was estimated at \$11 million, the balance of \$6.5 million was financed by the government through the sale of about 16.7% of its share to Digicel for \$4.2 million, with the difference being financed by TCL.⁷ Of the estimated project cost of \$11 million, 87% was financed by ADB (34%), the World Bank (51%), and TCL (15%). The ADB grant was fully used, 89% of the approved World Bank grant was used, and TCL used 64% of its estimate. This validation notes that the cost of consulting services, which TCL financed, was not reported in the project completion report (PCR) because government's contribution was not reflected in the government financial reports. This cost needs to be considered in the actual project cost. A project preparatory technical assistance (TA) project was approved in July 2010 to develop the international submarine fiber optic cable to complement the due diligence work conducted by the World Bank.⁸

7. The project was classified category B for environment. Two initial environmental examinations and two environmental management plans (EMPs) were prepared—one for the international submarine cable approved in July 2011 and the other for the domestic extension was approved in July 2016. The two EMPs were approved before the start of civil works. The small, temporary, and localized adverse impacts were managed by the proposed mitigation measures. The project was classified category C for both involuntary resettlement and indigenous peoples. It was categorized as no gender element, and no gender action plan was prepared.

8. The World Bank TA supported the development of a road map and policy framework to strengthen the regulatory environment, such as establishment of an independent regulator for the telecommunications sector. Through this TA, the staff of the Ministry of Meteorology, Environment, Information, Disaster Management, Climate Change and Communications (MEIDECC) were trained on tariff-related matters, regulation regimes, and spectrum fees, which are critical aspects needed to enforce the Communications Commission Act 2015.⁹ In August 2014, the government approved the establishment of a telecommunications regulator. However, there were no details provided on how it will be established. At project completion, no independent regulatory commission was established and MEIDECC still functioned as the regulator. The TCL Board was replaced by independent members, as required under the state-owned enterprise regulations.¹⁰

D. Implementation Arrangements

9. The Ministry of Finance and National Planning (MFNP) was the executing agency responsible for project implementation and financial management. A Cabinet subcommittee was

⁶ ADB records show that the grant closed in December 2018. March 2018 was the completion and commissioning of the domestic submarine cable. See ADB (Pacific Department). 2018. Back-to-Office Report for the Tonga–Fiji Submarine Cable Project. 13 July (internal).

⁷ ADB. 2020. *Completion Report: Tonga–Fiji Submarine Cable Project in Tonga*. Manila. The PCR (para. 14) noted a balance of \$7 million. The balance paid by TCL was based on ADB's minor change in scope. See ADB (Pacific Department). 2017. Minor Change in Scope for the Tonga–Fiji Submarine Cable Project. 22 May (internal).

⁸ Project Preparatory Technical Assistance (PPTA) 7560-REG: Tonga–Fiji Submarine Cable Project.

⁹ Kingdom of Tonga. 2015. *Communications Commission Act 2015*. Nuku'alofa.

¹⁰ ADB (Pacific Department). 2014. Aide Memoire for the Tonga–Fiji Submarine Cable Project. September (internal).

created to provide strategic guidance to the ICT sector and the project. As the implementing agency, TCL oversaw the establishment and efficient operation of both the international and domestic submarine cable system. TCL was supported by TCC, which managed project procurement and finance. The MEIDECC was responsible for establishing the internet's legal and regulatory environment. During the period 2013–2019, TCL increased its staffing to solve capacity constraints. The TCL and the TCC signed a formal agreement for TCC to provide accounting and auditing services for the project.

10. This validation notes the institutional arrangements were appropriate as it mobilized the pertinent agencies, including the key service providers in the industry. However, TCL lacked the requisite institutional capacity and staff to implement the project and was relying on TCC for accounting and auditing services, which was a conflict-of-interest case.

11. The PCR identified 39 grant covenants, 30 of which were complied with, 6 partially complied with, and 3 not complied with. The PCR indicated that seven were partially complied and two were not complied with. Among those that were partially complied was related to TCL not securing the proper expertise in time to manage project implementation. In addition, the rationale and process in TCL board member selection were not articulated. Moreover, MEIDECC still acted as the sector regulator and there was no progress in the adoption of a detailed road map with corresponding budget allocation to deploy ICT-based public service delivery (para. 8). In addition, counterpart financing after June 2014 was not included in the financial reporting; quarterly reports were inconsistently submitted during implementation; and a final report was not submitted by TCL. Also, audits reports were normally submitted past the deadline. Of the three covenants that were not complied with, one was related to the non-publication of relevant project information on a government website; the provision of resources to an independent ICT regulator; and the development of a detailed road map with budgetary resources for ICT-based public service delivery.

II. EVALUATION OF PERFORMANCE AND RATINGS

A. Relevance of Design and Formulation

12. The PCR rated the project relevant. The project was to contribute in achieving the government's national development outcome for a dynamic, knowledge-based economy, infrastructure, and technology; and to support the development framework pillar—infrastructure and technology inputs. It was consistent with ADB's Pacific Approach during 2010–2014 and 2016–2020, and aligned with ADB's country operations business plan¹¹ on ICT to become more affordable, accessible, and reliable in addressing the challenges, as highlighted in ADB's Strategy 2030.¹² The PCR considered the project design appropriate in achieving the intended outcome, as reliable internet connectivity promotes economic and social development. The design had clear logic and focused on infrastructure development and maximizing the benefits from the submarine cable through policy and regulatory support and training. The change in scope—by adding a domestic submarine cable component—provided access to island communities (para. 4). The DMF targets and risks remained largely unchanged throughout implementation.

13. This validation assesses the project as aligned with the government's and ADB's strategies. The minor change in scope, mainly to add additional domestic connection, was appropriate as it did not materially alter the overall objective of the project. Considering that the

¹¹ ADB. 2016. *Country Operations Business Plan: Tonga, 2017–2019*. Manila.

¹² ADB. 2018. *Strategy 2030: Achieving a Prosperous, Inclusive, Resilient and Sustainable Asia and the Pacific*. Manila.

TCL's operational and financial efficiency can lead to lower internet price, improving the internet speed and increasing the number of internet subscribers were logical.

14. This validation, however, notes the weaknesses in the DMF design. At the time of appraisal, the DMF had no baseline data.¹³ Instead of adding the domestic submarine fiber optic cable as one of the output indicators, the outcome indicators could have been revised to reflect the increase in access and coverage, particularly in Vava'u and Ha'apai. The DMF could have also added targets related to reduced lower internet price, such as increased in wholesale bandwidth, or reduced average wholesale price, increased subscribers, and increase in international and domestic traffic volume in megabits per second (Mbps) in the project areas. To support access to ICT-based public services in education and health, additional outcome and outputs indicators could have also been identified.¹⁴ Impact indicators could have focused on assessing the project's contribution to increased internet penetration rate, rather than aiming for an increased number in internet service providers (ISPs) as this entails significant efforts beyond constructing cable links and reducing retail prices—such as improving the regulatory environment and providing incentives for private sector participation. The project could have been designed to go beyond a mere additional capital to finance the first phase of the PRCP. While the World Bank focused on providing institutional support at the regulatory and policy side, ADB could have explored extending assistance to TCL.¹⁵ ADB missed an opportunity to advise on improving its governance structure and profitability from a private sector standpoint (i.e., collaboration between sovereign and nonsovereign operations).

15. The project could have been positioned to support private sector participation and helped achieve one of its impact development targets, which is public service delivery through e-application. Despite these shortcomings, the project supported government priorities in the ICT sector and appropriately changed the scope to help maintain the project's relevance. This validation assesses the project relevant.

B. Effectiveness in Achieving Project Outcomes and Outputs

16. The PCR rated the project highly effective as it installed a total of 1,233 kilometers of international and domestic submarine cables. It reported that between 2012 and 2016, registered individual subscribers increased by 46%, and 194% by 2019, against a target of 50%.¹⁶ Annual retail broadband fees decreased by 250% in 2016—from T\$2.00/megabyte in 2013 compared to T\$0.008/megabyte in 2019. Internet retail price tariff declined by 250% in 2016. This validation notes that based on the data provided by the PCR, the decline was 100%. Internet speed test target of 100% improvement was not assessed due to data unavailability. The PCR noted that, from 200 Mbps of wholesale internet bandwidth before the project, TCL increased it to 4,600 Mbps after. By 2018, TCL offered \$50/Mbps/month compared to its average wholesale price of \$478/Mbps/month in 2015. This led to lower retail price of internet access at \$1.32/Mbps/month—

¹³ A project result matrix could have been the source for reflecting baseline data and improving the indicators. See ADB (Pacific Department). 2013. Back-to-Office Report for the Tonga–Fiji Submarine Cable Project. 22 May (internal).

¹⁴ In 2012, the mission team met with the Ministry of Health to follow up on the initial discussion on a possible ADB support for the introduction of ICT-based applications in the sector. While there was an intention from ADB, this was not committed and captured in the DMF. See ADB (Pacific Department). 2012. Back-to-Office Report for the Tonga–Fiji Submarine Cable Project. 3 May (internal).

¹⁵ At the time the grant was approved, TCL was a private company with limited capacity to manage the project and as a sole service provider for wholesale international connectivity. See ADB (Pacific Department). 2011. Back-to-Office Report for the Tonga–Fiji Submarine Cable Project. 14 April (internal).

¹⁶ The PCR noted that starting 2012, TCL monitors individual subscribers rather than household connections.

which is 40% lower than the anticipated price of \$2.20/Mbps/month.¹⁷ The PCR noted that the growth in mobile device usage—with 85% of the population having phones—was a result of low retail internet prices. This validation assesses that of the three outcome indicators, two were achieved and speed outcome was not achieved.

17. This validation notes that achievement of output was not discussed in the main PCR, but rather summarized in its Appendix 2. TCL achieved its debt service coverage ratio target—based on the Audited Project Financial Statement of the company—stating that it paid its debt service on time. It also stated that it has always made its system available at 99.99%. TCL's fault handling time was less than 1 hour, compared to the 1-hour target. The PCR noted that this was for minor faults and did not report the handling time for major faults. Output 2's indicator on disbursements is a process efficiency indicator to be considered under efficiency. This validation assesses that all three output indicators were achieved. However, it also notes that is unclear how the 99.99% system availability was measured.

18. An initial environmental examination and an EMP were prepared for each cable component, one for the international and the second for the domestic submarine cable extension. The EMPs were approved prior to the start of civil works. Since the two outputs had minor, temporary, and localized adverse impacts on the environment, these were managed by the mitigation measures in the EMPs. Compliance monitoring was in the project's quarterly reports and properly disclosed. All environmental laws and regulations were complied with during cable installation and construction of the landing stations. There was no land acquisition or restrictions on land use or access to designated parks or protected areas during project screening and implementation, and no adverse effects on third party or persons. Based on the discussions above, this validation assesses the project effective.

C. Efficiency of Resource Use

19. The PCR rated the project highly efficient based on the project's recalculated economic internal rate of return (EIRR) at completion. The recomputed EIRRs for both international and domestic cable was 21.4% and for the domestic cable alone, it was 25%. Both exceeded the 12% benchmark. The EIRR recomputation used data from MEIDECC from 2013 to 2019 and consumer surplus was calculated the same way as at appraisal. Updated data suggested that the number of broadband subscribers almost tripled—from 18,000 in 2012 to 52,849 by 2019. Subscription fees declined from \$2.00/megabytes to \$0.008/megabytes, generating significant savings for customers. Actual project cost even with the domestic cable component was low compared to the appraisal estimate, although the actual did not include consultants cost, and tax and duties financed by TCL.

20. This validation notes that the recalculated EIRRs was not comparable with the EIRR at appraisal because of the inclusion of domestic cable at recalculation. The PCR could have separately recalculated EIRRs for each component. Nevertheless, the project's reestimated total EIRR for both international and domestic cable components exceeded 18%. The project was completed on time, with an extension mainly due to the additional scope. On the whole, this validation assesses the project highly efficient.

¹⁷ There is no record in the project documents that the anticipated price was \$2.20/Mbps/month, which can be validated. A back-to-office report dated May 2013 show that the retail price of internet services (per Mbps/month in US dollars) was \$716 in 2011 (baseline) with a target reduction to \$300. This baseline was revised to \$776 in 2014. See ADB (Pacific Department). 2013. *Back-to-Office Report for the Tonga–Fiji Submarine Cable Project*. 22 May (internal); and ADB (Pacific Department). 2014. *Back-to-Office Report for the Tonga–Fiji Submarine Cable Project*. 11 June (internal).

D. Preliminary Assessment of Sustainability

21. The PCR rated the project likely sustainable based on (i) the results of the recalculation of the project's financial internal rate of return (FIRR), (ii) the assessment of TCL's profitability, and (iii) the government's continued support to the ICT sector. At appraisal, the computed FIRR was 13.6% assuming a 25-year project life and 2-year implementation period, against the estimated weighted average cost of capital (WACC) of 0.02%. The project was financially viable with sufficient gap to hurdle all sensitivity tests conducted. At completion, the recomputed FIRR was 16.2%, which is higher than the recomputed WACC of 10.04%. The project is considered financially viable at completion unless TCL's revenue falls by 32%, which is highly unlikely given TCL's firm contract with TCC and Digicel, and the possibility of having incoming ISPs. The PCR noted that TCL generated profits from its operations from 2014 to 2019, earning \$70,157 in 2014 to \$648,072 by 2019 considering its average annual operations and maintenance cost of \$365,861, based on a currency exchange rate of T\$1.00 = \$0.4597.

22. This validation notes that the WACC estimates at appraisal and at completion differed. The WACC computation at completion (PCR, Appendix 9) showed the nominal cost of the combined World Bank and ADB grants at 15.00%, a tax-adjusted nominal cost of 11.25%, and the weighted component of WACC for the grants of 9.22%.¹⁸ These explain the difference between the two WACC estimates. Given that financing from the World Bank and ADB were grants, the assumed nominal cost should be about 3%. This validation notes that the total project cost at completion has yet to be computed accurately. While TCL's sustainability was considered dependent on its two main customers, both Digicel and TCC are members of TCL's board of directors and are stockholders.¹⁹ The enactment of the Communications Commission Act 2015 introduced a new regulatory and licensing regime. An independent telecommunications regulator was established. However, there were no resources to operationalize the commission and MEIDECC remained the regulator. The FIRR values exceeded the WACC, and TCL operations have been profitable, hence, this validation assesses the project likely sustainable.

III. OTHER PERFORMANCE ASSESSMENTS

A. Preliminary Assessment of Development Impact

23. The PCR rated the project's development impact satisfactory based solely on the e-Health initiative funded by ADB in 2019 to improve access to affordable health services across Tonga, and to the World Bank's Tonga Digital Government Support project intended to improve digital public service delivery. The PCR determined that the availability of improved internet connection and reduced internet rates benefited the education and health sectors. The Radiology Department of the Ministry of Health receives a 50% discount for transmitting x-ray results to Australia or New Zealand for diagnosis. TCL provides a 50% discount to TCC and Digicel for internet connections to schools and an 80% discount to the University of the South Pacific for access to regional campuses and education centers in Ha'apai and Vava'u. Tonga was able to provide

¹⁸ At appraisal, the combined World Bank and ADB grants had 0% nominal cost and tax-adjusted nominal cost, and -0.40% weighted component of WACC.

¹⁹ See <http://tongacable.to/board-of-directors/>. In 2010, ADB was concerned about the conflict of interest between TCC and TCL and the ability of TCL to operate independently. In 2013, the Cabinet approved TCL to be a state-owned enterprise and TCC was not represented in the new board of directors. At completion, the covenant on the process of selecting incoming members was partially complied with. There was a change in the board members in May 2014, but the rationale and process in selecting incoming members were not articulated. See ADB (Pacific Department). 2010. Back-to-Office Report for the Fact-Finding Mission for the Tonga-Fiji Submarine Cable Project. 24 September (internal); ADB (Pacific Department). 2013. Back-to-Office Report for the Review Mission for the Tonga-Fiji Submarine Cable Project. 22 May (internal).

internet access to 50 per 100 people by 2018, which is short by 10 compared with the government's target of 60 per 100 people.

24. This validation notes that the project identified two impact performance indicators to be achieved by 2016. The first is at least 10% increase in the number of Tonga-based ICT companies providing telecommunications, business network, and computer and information services. The second is at least two ICT-based public services in education and health are accessible for the general public. By 2019, TCC and Digicel remained as the two key ISP retail operators, while other operators such as the University of the South Pacific and EziNET offer restricted services, and Triesten is inactive. The PCR noted that this first performance indicator was not achieved. For the second indicator, the PCR indicate that this was partially achieved. Improved internet connectivity supported the ongoing ADB project on e-Health Initiative and the World Bank's Tonga Digital Government Support, which aimed to improve digital public service delivery.

25. Due to the weak project design of impact indicators in lieu of the first indicator, this validation notes that the internet penetration target, which is measured by internet access per 100 people by 2018, was not achieved. Also, the use of ICT in public service delivery in education and health has yet to be determined since no achievements under the project can be attributed to improved public service delivery. This validation assesses project development impact less than satisfactory.

B. Performance of the Borrower and Executing Agency

26. The PCR rated the performance of the MFNP as executing agency and TCL as implementing agencies satisfactory. The MFNP coordinated well with TCL during implementation, supported ADB and the World Bank project missions and consulted them during implementation. Despite limited experience with ADB procedures, they implemented the project in a timely manner. TCL lagged in its timely submission of the audited financial statements and entity financial statements through TCC. There were also no information or details on the Cabinet subcommittee's accomplishments and if it had indeed provided the guidance as envisaged.

27. This validation notes that TCL's transparency in managing the procurement process led to competitive and low bids, thus, generating savings in the international cable system investment cost. This allowed the change in project scope to include the domestic cable system, which was partly funded from grant savings. The government initiated due diligence work for the additional domestic cable link, which resulted in the timely approval and completion of the additional project scope. Although the cost of consulting services, which TCL financed, was an unaccounted project cost (para. 6), and relevant information related to procurement were not disclosed through its website (para. 11), overall, the government and TCL were able to deliver the project outputs on time and were able to secure funds for the additional work through partial equity sales. This validation assesses the performance of the MFNP and TCL satisfactory.

C. Performance of the Asian Development Bank and Cofinanciers

28. The PCR rated the performance of ADB and the World Bank satisfactory based on their close coordination with government agencies during processing and throughout implementation. ADB mobilized 17 missions, some jointly with the World Bank, and resolved issues through strong collaboration in an effective and timely manner.²⁰ In addition to its contribution to the infrastructure

²⁰ This validation notes that five back-to-office reports, including the PCR mission, are not available. The memo approved in 2016 indicating the additional project scope was also not available. During the June 2018 mission, it was

component, the World Bank also provided a TA to TCL and MEIDECC to strengthen their capacities through training in tariffs, regulatory regimes, and spectrum fees.

29. This validation notes that both ADB and the World Bank exercised significant flexibility in assisting the government implement the domestic cable system using savings and additional financial contributions from TCL and Digicel. After project completion in 2019, ADB provided funding for an e-Health initiative to improve the country's access to affordable health services while the World Bank provided ICT capacity development support to the government through the Tonga Digital Government Support Project to improve digital public service delivery. This validation assesses the performance of ADB and the World Bank satisfactory.

IV. OVERALL ASSESSMENT, LESSONS, AND RECOMMENDATIONS

A. Overall Assessment and Ratings

30. The PCR rated the overall project highly successful. It is also rated relevant being aligned with the government's strategies and to ADB priorities. The PCR rated the project highly effective as it improved internet access and speed and reduced the costs for Tongan internet users. It was deemed highly efficient as the recomputed EIRR was higher than the 12% hurdle rate and the project generated savings. The project was rated likely sustainable as the recomputed FIRR exceeded the WACC and TCL had become a profitable entity.

31. This validation assesses the project relevant. The project was effective as it increased the number of subscribers and lowered retail price, although internet speed was not validated. TCL demonstrated operational and financial efficiency. The project was highly efficient as the recomputed EIRR was higher than 18%. It was completed on time. The project is likely sustainable given that its recomputed FIRR is higher than the WACC and the TCL's profitability, once the international and domestic cable systems became operational. Overall, this validation rates the project successful.

Overall Ratings

Validation Criteria	PCR	IED Review	Reason for Disagreement and/or Comments
Relevance	Relevant	Relevant	
Effectiveness	Highly effective	Effective	Two outcome indicators were achieved; the third was not substantiated.
Efficiency	Highly efficient	Highly efficient	
Sustainability	Likely sustainable	Likely sustainable	
Overall Assessment	Highly successful	Successful	
Preliminary assessment of impact	Satisfactory	Less than satisfactory	The intended development impact indicator was not achieved.
Borrower and executing agency	Satisfactory	Satisfactory	
Performance of ADB	Satisfactory	Satisfactory	

mentioned that a TCL nominee will attend the training on preparing PCR. However, no government PCR was available at completion.

Validation Criteria	PCR	IED Review	Reason for Disagreement and/or Comments
Quality of PCR		Satisfactory	Para. 36.

ADB = Asian Development Bank, IED = Independent Evaluation Department, PCR = project completion report.
Source: ADB (Independent Evaluation Department).

B. Lessons

32. The PCR identified the following lessons: First, sector regulation and enforcement should have been strengthened to enhance the project's development impacts aside from just focusing on strengthening Tonga's ICT policy and regulatory environment. Second, the project design could have included a knowledge event to enable Tonga, ADB, and the regional stakeholders to process the experience and transfer useful lessons for scaling up other ADB submarine cable projects in the Cook Islands, Kiribati, Nauru, Palau, and Samoa. Although mostly written as recommendations, this validation generally supports the above lessons.

33. This validation offers two additional lessons: First, on the **project-level**, close coordination with other development banks, such as the World Bank, the government's clear infrastructure priorities and plan, and its good relationship with a neighboring country is crucial to ensure project readiness, availability of funds, and timely implementation of the project. Second, **on a results framework level**, for a sector such as ICT, with limited skills, expertise, and private sector involvement especially in a small country, project financing provides an opportunity for development banks, such as ADB, to leverage its development objectives. These include promoting private sector participation, improving public service delivery, and strengthening institutions. Infrastructure projects are only a means to achieve development outcomes and impacts. This is a principle that most infrastructure project designs could be based on.

C. Recommendations for Follow-Up

34. The PCR recommended that ADB should follow up on the government's allocation of financial and technical resources to operationalize the Communications Commission. This validation recommends the periodic monitoring of TCL's performance to ensure that project-provided assets are operated and maintained well, including monitoring the performance of the service providers for the prices of services that they offer.

V. OTHER CONSIDERATIONS AND FOLLOW-UP

A. Monitoring and Reporting

35. TCL, assisted by TCC, did submit quarterly unaudited interim financial reports to ADB although these were submitted late. TCL did not publish relevant project information on a government website as planned. The audited financial statement for July 2017–September 2018 did not include counterpart contributions from MEIDECC or from other government agencies. Improvements in internet speed and achievements related to the development impact also need to be monitored.

B. Comments on Project Completion Report Quality

36. The PCR was consistent with the pertinent ADB guidelines. However, it assessed the project to be highly effective when it did not measure if the outcome indicator on internet speed test was achieved. It could have provided a separate data on Tongatapu with those of Ha'apai and Vava'u to clearly identify where the number of broadband internet service subscribers came from. Its recomputed EIRR for the combined cable links was robust, but it should have provided EIRR recomputation for the international cable link to compare with the EIRR estimate at appraisal. There was an issue in the WACC estimate at completion, nevertheless, the project FIRR still exceeded the WACC. Notwithstanding the shortcomings, this validation assesses the quality of the PCR satisfactory.

C. Data Sources for Validation

37. Data sources for this validation included the PCR, the report and recommendation of the President, back-to-office reports, the government's and ADB strategies and policies, and other ADB guidelines.

D. Recommendation for Independent Evaluation Department Follow-Up

38. This validation concurs with the PCR's recommendation to assess the project as part of a broader assessment of the Cook Islands, Kiribati, Nauru, Palau, and Samoa submarine cable projects in the Pacific.