

Document of  
The World Bank

Report No: ICR00003036

IMPLEMENTATION COMPLETION AND RESULTS REPORT  
(IDA-H6280)

ON A

IDA GRANT

IN THE AMOUNT OF SDR 3.32MILLION  
(US\$ 5.0 MILLION EQUIVALENT)

TO THE

KINGDOM OF TONGA

FOR A

TONGA POST TSUNAMI RECONSTRUCTION PROJECT

June 27, 2014

Timor Leste, Papua New Guinea and Pacific Islands Country Department  
Sustainable Development Department  
East Asia and Pacific Region

## CURRENCY EQUIVALENTS

(Exchange Rate Effective June 26, 2014)

Currency Unit = Tongan Pa'anga (TOP)

1.85 TOP = US\$ 1

1.54384 US\$ = SDR 1

FISCAL YEAR

July 1 – June 30

## ABBREVIATIONS AND ACRONYMS

Climate Change Adaptation	CCA
Country Assistance Strategy	CAS
Disaster Risk Management	DRM
Emergency Project Paper	EPP
Environmental and Social Screening Assessment Framework	ESSAF
Environmental Impact Assessment	EIA
Environmental Management Plans	EMPs
Exclusive Economic Zone	EEZ
Financial Management	FM
Financing Agreement	FA
Government of Tonga	GoT
Implementation Completion and Results Report	ICR
Implementation Status Reports	ISRs
International Development Association	IDA
Ministry of Finance and National Planning	MOFNP
Ministry of Infrastructure	MoI
Ministry of Lands, Environment, Climate Change and Natural Resources	MLECCNR
Ministry of Lands, Survey and Natural Resources	MLSNR
Ministry of Works	MoW
Monitoring and Evaluation	M&E
National Emergency Management Office	NEMO
Niua Development Committee	NDC
Niutoputapu island	NTT
Operational Risk Assessment Framework	ORAF
Project Coordination Committee	PCC
Project Development Objectives	PDO
Project Management Unit	PMU
Tonga Cyclone Emergency Recovery Project	TCERP
Tonga Strategic Development Framework	TSDF
Transport Sector Consolidation Project	TSCP

Vice President: Axel van Trotsenburg

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**TONGA**  
Tonga Post Tsunami Reconstruction Project

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A. Basic Information			
Country:	Tonga	Project Name:	Tonga Post Tsunami Reconstruction
Project ID:	P120595	L/C/TF Number(s):	IDA-H6280
ICR Date:	06/27/2014	ICR Type:	Core ICR
Lending Instrument:	ERL	Borrower:	KINGDOM OF TONGA
Original Total Commitment:	XDR 3.32M	Disbursed Amount:	XDR 3.32M
Revised Amount:	XDR 3.32M		
<b>Environmental Category: B</b>			
<b>Implementing Agencies:</b>			
Ministry of Works			
Ministry of Infrastructure			
<b>Cofinanciers and Other External Partners:</b>			

B. Key Dates				
Process	Date	Process	Original Date	Revised / Actual Date(s)
Concept Review:	06/07/2010	Effectiveness:	01/14/2011	11/09/2010
Appraisal:		Restructuring(s):		11/18/2013
Approval:	10/19/2010	Mid-term Review:	03/15/2012	09/10/2012
		Closing:	03/31/2013	12/31/2013

C. Ratings Summary	
C.1 Performance Rating by ICR	
Outcomes:	Moderately Satisfactory
Risk to Development Outcome:	Moderate
Bank Performance:	Moderately Satisfactory
Borrower Performance:	Moderately Satisfactory

C.2 Detailed Ratings of Bank and Borrower Performance (by ICR)			
Bank	Ratings	Borrower	Ratings
Quality at Entry:	Moderately Satisfactory	Government:	Moderately Satisfactory
Quality of Supervision:	Moderately Satisfactory	Implementing Agency/Agencies:	Moderately Unsatisfactory
<b>Overall Bank Performance:</b>	Moderately Satisfactory	<b>Overall Borrower Performance:</b>	Moderately Satisfactory

<b>C.3 Quality at Entry and Implementation Performance Indicators</b>			
<b>Implementation Performance</b>	<b>Indicators</b>	<b>QAG Assessments (if any)</b>	<b>Rating</b>
Potential Problem Project at any time (Yes/No):	No	Quality at Entry (QEA):	None
Problem Project at any time (Yes/No):	No	Quality of Supervision (QSA):	None
DO rating before Closing/Inactive status:	Moderately Satisfactory		

<b>D. Sector and Theme Codes</b>		
	<b>Original</b>	<b>Actual</b>
<b>Sector Code (as % of total Bank financing)</b>		
Housing construction	81	81
Information technology	2	2
Public administration- Water, sanitation and flood protection	17	17
<b>Theme Code (as % of total Bank financing)</b>		
Natural disaster management	100	100

<b>E. Bank Staff</b>		
<b>Positions</b>	<b>At ICR</b>	<b>At Approval</b>
Vice President:	Axel van Trotsenburg	James W. Adams
Country Director:	Franz R. Drees-Gross	Ferid Belhaj
Sector Manager:	Michel Kerf	Charles M. Feinstein
Project Team Leader:	Michael Bonte-Grapentin	Demetrios Papathanasiou
ICR Team Leader:	Olivia Warrick	
ICR Primary Author:	Olivia Warrick	

## **F. Results Framework Analysis**

### **Project Development Objectives (from Project Appraisal Document)**

To assist the Government of Tonga to implement its Niuatoputapu Priority Tsunami Recovery Program aimed at recovering the living standard of the population living in the island affected by the Tsunami of September 30, 2009, through the reconstruction of residential houses with auxiliary water facilities in Niuatoputapu, and strengthening Tonga's capacity to address future natural disasters.

**Revised Project Development Objectives (as approved by original approving authority)**

To assist the Government of Tonga to implement its Niuatoputapu Priority Tsunami Recovery Program aimed at recovering the living standard of the population living in the island affected by the Tsunami of September 30, 2009, through the reconstruction of residential houses with auxiliary infrastructure facilities in Niuatoputapu, and strengthening Tonga's capacity to address future natural disasters

**(a) PDO Indicator(s)**

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
<b>Indicator 1 :</b>	Restored housing, community facilities and small enterprises for affected families			
Value quantitative or Qualitative)	0	85	73	73
Date achieved	10/05/2010	12/31/2013	12/31/2013	12/31/2013
Comments (incl. % achievement)	At appraisal it was expected that 85 new, cyclone-resilient houses would be constructed at a site further inland with upgraded water and sanitation facilities. This number was later modified to 73 to account for 12 housing units provided by other donors.			
<b>Indicator 2 :</b>	Provision of auxiliary water and sanitation facilities			
Value quantitative or Qualitative)	No	Yes		Yes
Date achieved	10/05/2010	12/31/2013		12/31/2013
Comments (incl. % achievement)				
<b>Indicator 3 :</b>	Establishment of community risk management plans			
Value quantitative or Qualitative)	No	Yes		Yes
Date achieved	10/05/2010	12/31/2013		12/31/2013
Comments (incl. % achievement)				

**(b) Intermediate Outcome Indicator(s)**

Indicator	Baseline Value	Original Target Values (from approval documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
<b>Indicator 1 :</b>	Housing materials for families affected by the tsunami			
Value	0	100%		100%

(quantitative or Qualitative)				
Date achieved	10/05/2010	12/31/2011		12/31/2011
Comments (incl. % achievement)				
<b>Indicator 2 :</b>	Supply of materials to Niuatoputapu			
Value (quantitative or Qualitative)	0	100%		100%
Date achieved	10/05/2010	12/31/2011		12/31/2011
Comments (incl. % achievement)				
<b>Indicator 3 :</b>	Construction and supervision of housing, rainwater harvesting and sanitation facilities			
Value (quantitative or Qualitative)	0	100%		100%
Date achieved	10/05/2010	12/31/2011		12/31/2011
Comments (incl. % achievement)				
<b>Indicator 4 :</b>	Kilometers of rural roads resealed			
Value (quantitative or Qualitative)	0	8		13
Date achieved	10/05/2013	12/31/2013		12/31/2013
Comments (incl. % achievement)	This indicator was added as part of a level 2 Board Restructure, approved on 18 November 2013.			

### G. Ratings of Project Performance in ISRs

No.	Date ISR Archived	DO	IP	Actual Disbursements (USD millions)
1	09/21/2011	Moderately Satisfactory	Moderately Satisfactory	0.70
2	10/12/2012	Moderately Satisfactory	Moderately Satisfactory	3.95
3	06/12/2013	Satisfactory	Moderately Satisfactory	4.85
4	12/29/2013	Moderately Satisfactory	Moderately Satisfactory	5.10

## H. Restructuring (if any)

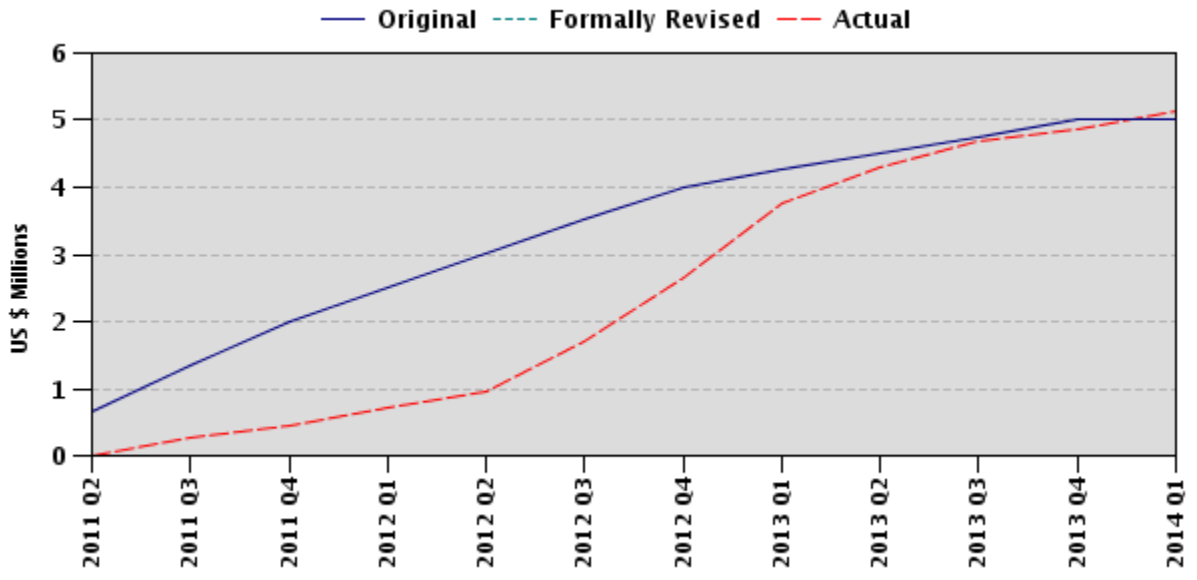
Restructuring Date(s)	Board Approved PDO Change	ISR Ratings at Restructuring		Amount Disbursed at Restructuring in USD millions	Reason for Restructuring & Key Changes Made
		DO	IP		
11/18/2013	Y	S	MS	5.10	The initial PDO was narrowly focused on housing reconstruction and did not explicitly include transport. Therefore, the PDO was changed slightly to cover "auxiliary infrastructure" rather than only "auxiliary water and sanitation." In addition to slightly expanding the scope of the PDO, the restructuring included associated minor modifications to component descriptions, a reallocation of funds between disbursement categories to enable financing of proposed additional activities, and the inclusion of an additional intermediate indicator on road works. The restructure also allowed for retroactive financing of road works that were already commenced by the Tongan Government.

If PDO and/or Key Outcome Targets were formally revised (approved by the original approving body) enter ratings below:

	Outcome Ratings
Against Original PDO/Targets	Moderately Satisfactory
Against Formally Revised PDO/Targets	Moderately Satisfactory
Overall (weighted) rating	Moderately Satisfactory



## I. Disbursement Profile





## **1. Project Context, Development Objectives and Design**

### **1.1 Context at Appraisal**

#### **Country and sector background**

1. The Kingdom of Tonga consists of 169 Islands with a total population estimated at 120,000. The country lies in the South Pacific and stretches over a distance of about 800 kilometers from north to south, covering a total land area of 748 square kilometers with an Exclusive Economic Zone (EEZ) of about 700,000 square kilometers. The population is primarily Polynesian, with a literacy rate close to 99 per cent and a relatively low incidence of poverty.
2. On September 30 2009, Niuatoputapu island (NTT) in the Niua's group was struck by an earthquake of 8.3 magnitudes whose epicenter was 190km to the north east of the island. This was quickly followed by three tsunami waves with a maximum flow height of 16.9 meters and penetration of over one kilometer inland. As much as 46 percent of the island was inundated resulting in the deaths of 9 people and damages estimated at about US\$10 million. Of a total of about 255 private houses on the island, 85 were totally destroyed and about 40 partially damaged by the tsunami. Meanwhile, most of the public utilities and government buildings were completely destroyed, along with the water and sanitation system. NTT is located in the northernmost part of Tonga. The island is remote and relatively isolated from the rest of Tonga.
3. The Niuatoputapu Priority Tsunami Recovery Program was developed following assessments conducted by a government team and endorsed by the National Emergency Recovery Committee on October 2009. The long term rehabilitation strategy of the Government for NTT aims to restore infrastructure, livelihoods and normalcy to the island at an estimated cost of about US\$8-9million. The largest expense was expected to be the relocation and construction of 85 family housing units and rehabilitation of about 40 partially damaged houses estimated at about US\$3.6 million. The plan also called for an end-to-end review of the disaster risk management process.

#### **Rationale for Bank Assistance**

4. There was a clear rationale for the Bank to assist the Government of Tonga (GoT) in post-tsunami reconstruction. At the time of appraisal a number of donors had pledged support to the NTT Tsunami Recovery program in line with their traditional areas of engagement in the Kingdom. Residential housing was the sector with the largest remaining financing gap requiring external aid. The GoT had already decided that new residential houses would follow the cyclone-resilient design employed under the previous successful World Bank-supported Tonga Cyclone Emergency Recovery Project (TCERP) (PO75171) approved by the Board October 19, 2010. The World Bank was therefore a natural partner for housing recovery and disaster risk management in the GoT's view.

5. The project was consistent with the World Bank's Pacific Regional Engagement Framework 2006-2009 (in effect at the time of appraisal) objective of helping Pacific member countries to manage natural disasters, where earthquakes and earthquake-incurred tsunamis remain potential threats. The aims of the project were aligned with the following eligible objectives under the OP/BP 8.0, according to which the Bank may provide a rapid response to a borrower's request for urgent assistance: (i) rebuilding and restoring physical assets; (ii) restoring essential services; and (iii) supporting measures to mitigate or avert the potential effects of future emergencies in countries at high risk.

## **1.2 Original Project Development Objectives (PDO) and Key Indicators**

6. The original Project objective was: "to assist the Government of Tonga to implement its Niuatoputapu Priority Tsunami Recovery Program aimed at recovering the living standard of the population living in the island affected by the Tsunami of September 30, 2009, through the reconstruction of residential houses with auxiliary water and sanitation facilities in Niuatoputapu, and strengthening Tonga's capacity to address future natural disasters". At appraisal, key PDO-level outcome indicators were:
  - 1) Restored housing for affected families
  - 2) Provision of auxiliary water and sanitation facilities
  - 3) Establishment of community risk management plans

## **1.3 Revised PDO (as approved by original approving authority) and Key Indicators, and reasons/justification**

7. The original PDO was revised through a Level 1 restructuring approved by IDA's Board of Executive Directors on 18 November 2013 to: "To assist the Government of Tonga to implement its Niuatoputapu Priority Tsunami Recovery Program aimed at recovering the living standard of the population living in the island affected by the Tsunami of September 30, 2009, through the reconstruction of residential houses with auxiliary **infrastructure** facilities in Niuatoputapu, and strengthening Tonga's capacity to address future natural disasters". A new intermediate indicator was added to reflect the above change: "Kilometers of rural roads resealed". A change was made to the first PDO-level indicator as follows: "Restored housing, **community facilities and small enterprises** for affected families", and the cumulative target value was altered to reflect the updated situation (see Annex 2)
8. This restructuring was carried out in response to a GoT's request to include minor roads works and community facilities. In April 2012 it was noted by the GoT and the Bank during a project super vision mission that the sand seal of the main collector road on NTT – which had been constructed a year earlier by the GoT, outside of the Project – was showing signs of distress. Patching and resurfacing the road was fundamental to connecting the new villages constructed under this project with key economic and social services. This required broadening the scope of the PDO which was previously narrowly focused upon water and sanitation facilities only. During the course of project implementation the GoT and the Bank identified the need to construct commercial and community buildings for the relocated village in addition to family houses and the first PDO level indicator was therefore adjusted accordingly.

#### 1.4 Main Beneficiaries,

9. The primary target group was the NTT community (total population approximately 1100 people) all of whom were affected by the 2009 Tsunami and were generally vulnerable to natural hazards due to their coastal location and relative isolation. The main beneficiaries of the activities under Components 1 and 2 were households whose homes had been destroyed or damaged by the tsunami. The community benefitted from new, cyclone-resilient homes with upgraded water and sanitation facilities constructed at a less vulnerable site further inland, from improved roads and from disaster-resilient retrofitting of houses partially damaged but not totally destroyed. The total number of households benefitting from reconstruction and restoration activities was modified slightly from the number envisaged at appraisal (see Annex 2). The NTT community is also expected to benefit from updated community risk plans (Component 3).
10. Secondary beneficiaries benefitting from project activities are listed in the table below, with details on outputs in Annex 2.

**Table 1. Secondary Beneficiaries**

Project activities	Beneficiaries	Benefits
Component 1	Ministry of Works (MoW)/Ministry of Infrastructure (MoI) (MoW was restructured to become MoI during implementation)	Technical capacity in supervision of housing construction and road construction works increased
	NTT residents (in addition to those receiving new or upgraded houses)	Hired as labor and carpenters (particularly youth), providing employment opportunities post-tsunami. Practical trade skills in building construction were transferred
Component 2	Local private contractors (also benefited through Component 1)	Gained technical experience and experience in preparation of proposal documents and compliance with Environmental Management Plans.
	Local communities	Employment opportunities and technical skills increased through use of local labor for road resealing.
Component 3	Ministry of Lands, Survey and Natural Resources (MLSNR)/Ministry of Lands, Environment, Climate Change and Natural Resources (MLECCNR) (MLSNR was restructured to become MLECCNR during implementation)	Strengthened technical capacity in risk mapping, land use planning, geospatial data management and developing risk information
	National Emergency Management Office (NEMO)	Increased capacity to develop and implement community risk plans

## 1.5 Original Components

11. The project had four components. Components 1 and 2 were aimed at recovering the living standard of communities living in NTT, Component 3 was intended to strengthen Tonga's capacity to deal with future natural disasters and Component 4 supported project management:

**Component 1: Cyclone-Resistant Housing Construction (US\$3.35m)** including construction and supervision of about 85 units of low-cost cyclone-resistant housing in NTT to replace completely damaged houses, as well as associated consulting assignments and ancillary works (water and sanitation). These housing units will be built on land specifically allocated by the GOT for this purpose. The new residential houses will be built to cyclone category 4 standards and located on higher ground in areas close to original sites following close community consultation.

**Component 2: Retrofitting of partially damaged housing and buildings (US\$0.35):** financing construction materials and small works for the retrofitting of about 40 partially damaged houses, small enterprises buildings and community halls. It will also include consulting services for assessment of needs, design and supervision of works.

**Component 3: Strengthening of Disaster Risk Management (US\$0.5m):** providing equipment for hazard and risk information assessment and institutional strengthening of the planning and GIS units of the Ministry of Land Survey and Natural Resources. It will also finance the preparation of community disaster risk management plans in Niuatoputapu.

**Component 4: Project Management (US\$0.4m):** financing the Project Management Unit, which will carry-out management and coordination of Project activities, financial management and accounting, provide engineering oversight, procurement, monitoring and reporting. It will also cover the costs of carrying out Project audits, including audits of Project Accounts, and agreed operational expenses. Given the considerable uncertainties and potential logistics challenges during Project implementation, an *unallocated amount of US\$0.3 million* was included in the Project to cover contingencies and currently unforeseen needs.

## 1.6 Revised Components

12. The description of Component 2 was revised during the Level 1 project restructure as follows: **Component 2: Retrofitting of partially damaged housing and buildings and infrastructure services.** This component will finance construction materials and small works for the retrofitting **and restoration** of houses, small enterprises buildings and community halls, **and auxiliary road infrastructure.** It will also include construction materials, **land preparation, road works** and **other** small works and technical assistance for assessment of needs, construction design and supervision of works. The additions were made to explicitly include prioritized additional activities and improve originally planned infrastructure facilities utilizing all available grant funds (see Section 1.3).

## 1.7 Other significant changes

13. Retroactive finance: The Board level 1 restructure included approval to finance preventative road maintenance works retroactively. The GoT decided to begin road works in parallel to the restructure approval process because equipment and personnel were present on remote NTT at the time. Waiting may have increased implementation time and cost.
14. Funding reallocation: Reallocations between expenditure categories approved by the Board are listed in Table 2 below:

**Table 2. Funding reallocation**

Expenditure Category	Allocations (SDR)		Reason
	Original	Revised	
(1) Works under Component 1 and 2 of the Project, goods, consultants' services, Operating Costs and Training	1,180,000	1,330,000	To allow for implementation of additional roadwork activities
(2) Resettlement Compensation	60,000	70,000	To cover final approved compensation to households
(3) Works under Part A.2 of the Project	1,880,000	1,920,000	Reflects actual expenditure of the combined construction (lot1) and retrofitting (lot 2) contracts
(4) Unallocated	200,000	0	Unallocated funds were used
<b>TOTAL AMOUNT</b>	<b>3,320,000</b>	<b>3,320,000</b>	

15. Extensions: The project timeframe was extended by a cumulative total of 9 months to a) enable time for the additional roadwork activities to be completed, and b) allow for outstanding activities to be completed under Component 3. This was done by way of two level two extensions approved by the Country Director on January 17, 2012 and by the Board on November 18, 2013 respectively.
16. Force Account: The financing agreement was amended on January 13, 2012 via approval by the Country Director to include force account as a procurement method. Due to the remoteness of NTT, the GoT and Bank team agreed that it would be too costly and time-consuming to procure a contract for land clearing works under Component 1 through private contracting.

## 2. Key Factors Affecting Implementation and Outcomes

### 2.1 Project Preparation, Design and Quality at Entry

17. **Soundness of the background analysis:** Project preparation and design took place in the context of the GoT's emergency response to the disaster. Background analysis was limited by time constraints and the remoteness of the island; transport links to NTT were sporadic. Lessons learned from previous post-disaster reconstruction projects, specifically the Tonga Cyclone Emergency Recovery Project (TCERP) as well as best practices in project implementation arrangements in a remote location, informed the design of this operation, most significantly: reconstructed housing units followed a simple hazard resilient design successfully previously used in Tonga; experienced local consultants were employed to complement official government activities in project management and works supervision, and; capacity building activities under Component 3 reflected recommendations produced by TCERP.
18. **Assessment of project design:** The number and complexity of components and their geographic concentration was generally appropriate for the available implementation and management capacity in Tonga. However, physical works under Component 1 could not proceed until land negotiations had been finalized. A guiding principle of the design of the physical components was GOT's requirement after consultation that the new houses replacing those destroyed should be relocated on land further from the sea and on higher ground to provide increased resilience against future events. This resulted in the need for land acquisition. This land had to be identified, surveyed, and replacement cost studies completed before negotiations with land owners could commence. These negotiations were time consuming due to limited land availability and complex landholding arrangements. Only after completion of these negotiations and necessary legal transfer activities, could land allocation and clearing commence. This process involved a number of sequential activities, each with their own complexities; as a result, the overall process took two years to complete. It is understandable however that in an emergency operation, the team did not want to delay effectiveness by making finalization of land negotiations a condition of effectiveness.
19. Capacity building activities to strengthen disaster-risk management in Component 3 were an essential feature of the project but were designed in such a way that they operated in parallel to emergency reconstruction activities in Components 1 and 2 identified as priority in the NTT Priority Tsunami Recovery Plan. Unlike Components 1 and 2, activities were not thoroughly conceived at appraisal and involved a separate ministry whose capacity to implement the component might have been better assessed. The PDO was overly ambitious with regards to Component 3: "...strengthening Tonga's capacity to address future natural disasters". A more targeted specification of who's capacity was intended to be built and in what way would have enabled a better analysis of outcomes
20. **Adequacy of Participatory Processes and Government Commitment:** The nature of an emergency operation constrained extensive community participation in project design; however consultation and participation commenced as part of the initial damage assessment, which was the first available opportunity. This consultation focused on the needs of those people affected by the tsunami to assess impacts and



identify ways the World Bank could appropriately mobilize resources to assist in the recovery. The Emergency Project Paper (EPP) refers to “close community consultation” in locating new houses on higher ground, and “a rapid community consultation conducted by local government officials to ascertain the community’s concerns ...”. “Consultations with affected households have resulted in the majority of people agreeing to relocate away from the coast.” Because the land on which the new housing was going to be constructed had not been identified at that time, it was not possible to consult with the owners of this land. The Government proactively negotiated with the land owners to identify appropriate land and to avail this land to host the relocated houses. Although this process was protracted, this is not uncommon where land owners are being requested to avail land for a project where they are not direct beneficiaries. However, completion reports and Implementation Status Reports (ISRs) indicate that the NTT community is highly satisfied with their new village indicating that their involvement in the initial design of housing and infrastructure was satisfactory. The GoT was highly committed to hazard-resilient reconstruction at appraisal and continued to be so throughout the project as evidenced by the securing of US\$4 million parallel financing from other donors to support programs to complement the IDA financed project under the NTT tsunami reconstruction program.

21. **Assessment of project risks and mitigation measures:** An Operational Risk Assessment Framework (ORAF) was not compulsory for this operation and none was developed. The risk analysis at project preparation noted five substantial risks (limited procurement experience, logistics / transportation, financial cost and time overruns, financial management, land acquisition) which were all reduced to ‘moderate’ after mitigation. Three of these risks materialized but the project mitigated them effectively. However, the land acquisition risk may have been underrated and perhaps should have retained a rating of substantial after mitigation, given knowledge of local land politics in the Pacific islands. Further, although institutional risks relating to the high workload of the PMU were identified, low capacity in implementing agencies to implement activities was not thoroughly assessed. Low implementation capacity of MLSNR and NEMO contributed to significant delays in procurement of goods and services under Component 3 and should have been explicitly identified as a risk.

## 2.2 Implementation

22. **Mid-term review and restructuring:** As part of the mid-term review process, discussions focused on required amendments to the financing agreement to accommodate potential additional activities, which would include changes outlined in sections 1.3, 1.6 and 1.7 above to allow for road and small works to be completed in time. It was agreed to restructure the project to accommodate these changes.

23. **Implementation problems and actions taken:**

Problem: Implementation delays. Despite initial consultations by the MLSNR, not all land owners identified agreed to the GoT’s compensation. The protracted land acquisition process for new houses delayed physical implementation of Components 1 and 2 by several months, which limited the time available for completion. Low

implementation capacity within MLSNR delayed procurement of consultants to undertake technical capacity assessment and strengthening in mapping and risk information generation. The PMU and the Bank team concentrated resources on coordinating physical investments, compounding the issue.

Actions: Additional land from the GoT reserve was made available and MLSNR moved forward discussions with other willing land owners eventually resolving the issue. The project extensions allowed sufficient time for the completion of Component 3 activities and a DRM staff member was added to the Bank team to facilitate implementation of this component. Despite initial delays all activities in Components 1 and 2 were completed by the original closing date.

24. Problem: Project Management limitations. The overall management and coordination of this project and those related but funded by other donors, relied on the efforts and expertise of an individual consultant, who was appointed on the strength of having previously managed the TCERMP. Although supported by other individual technical consultants, the management and coordination tasks were particularly onerous for one individual and required some specific skills to ensure political pressure was applied to clear bottlenecks, which was not always forthcoming. The project manager's contract was not extended to cover the project extensions and so the project overall was not directly managed (apart from remaining road maintenance activities which were managed by a different PMU, which worked well) for the final 9 months.

Action: Alternative management introduced for restructured project. MOI decided to co-opt the management resources under the Ministry's Transport Consolidation Project (TSCP) project to coordinate and manage the remaining implementation under Component 1. This reflected the nature of the remaining works, and was a natural fit for both the mandate and the expertise of the TSCP PMU. TSCP PMU performed highly satisfactorily in managing the final stages of the project works under execution, but overall project management and in particular project completion activities had been impacted by the lack of a dedicated project manager for the project and were facing delays.

25. Problem: Poor contract management. Works contract cost variations were agreed to on Component 1 without authorization, causing cost-overruns of about US\$90,000 on one contract. On two further contracts material changes have been undertaken without Bank prior approval altering the terms of references and extending the contract end dates.

Action: Closer monitoring of supervisory staff by PMU. It was recognized that very limited and slow communications between the project site and the PMU has contributed to the difficulty of contract administration. . The PMU agreed to exercise much closer monitoring and management of its supervisory staff, and further contract management issue was avoided.

### **2.3 Monitoring and Evaluation (M&E) Design, Implementation and Utilization**

#### **M&E Design**

26. The primary tool for M&E was the results framework and monitoring arrangements as set out in the FA and EPP. The first two of the three project outcome indicators in the results framework adequately reflect the original and revised PDO since the PDO

identifies provision of housing and auxiliary infrastructure as the intended primary outcome. Intermediate results indicators are directly linked to these and include appropriate measures. However, the third outcome indicator has limited utility as it reflects completion of a key *output* (completion of community risk plans) rather than achievement of the intended *outcome* (strengthened capacity to address future natural disasters). Success in this regard would have been better measured by the degree of uptake or awareness of community risk plans. Similarly, intermediate indicators for Component 3 are broad and do little to measure the impact of equipment, training and awareness activities on capacity at ministry and community levels. For example, taken alone, the mere delivery of equipment and training to the GIS unit of MLSNR, does not necessarily indicate improved capacity; the application of acquired risk mapping expertise in other geographic areas would be a more appropriate demonstration of capacity strengthening. The EPP lays out arrangements (target values and data collection methods) for monitoring progress towards achieving outputs and outcomes. However, there was an unfortunate disconnect between the results framework and the monitoring arrangements. The three outcome indicators were not included in the monitoring arrangements and target values were not ascribed, so these could not be evaluated during implementation. Similarly, only six of the eight intermediate outcome indicators were reflected in the monitoring arrangements.

### **M&E Implementation**

27. Due to the emergency nature and relatively short duration of the project the disconnect between the results framework and the monitoring arrangements did not have a serious effect on monitoring of the results during implementation. Actual progress of PDO and intermediate outcome indicators were monitored in the ISRs and A-Ms during implementation. This was mainly undertaken by the Bank team and the PMU did not regularly collect data as they should have. However, a comprehensive survey of households in the reconstructed village was completed at the end of the project and this provides a useful evaluation of the impact of the project (Annex 5).

### **M&E Utilization**

28. Because of limited data collection, the results framework was not utilized in most project progress reports which, although generally submitted, were not forward looking and results-orientated. From the Bank side, the continuous supervision and mission reports, including detailed Action Plans for PMU follow-up, provided input to the M&E efforts. This monitoring highlighted a number of required modifications to initial project design, including incorporating preventative road maintenance work, connecting new houses to the reticulated water supply, increasing the number of structures receiving retrofitting work and altering the design of community risk plans. Although the official results framework received little attention, monitoring by the Bank and PMU was effective in enabling the project to respond to evolving needs. For example, new houses were initially supplied with rainwater capture and storage facilities only but it became evident during the course of the project that drought conditions required houses to also be connected to the reticulated water system.

## **2.4 Safeguard and Fiduciary Compliance**

## **Environment**

29. The Project was Category B for environment as the reconstruction of the housing was expected to create only minor and manageable environmental impacts due to their construction from predominantly imported materials and requirement for only light civil works. An Environmental and Social Screening Assessment Framework (ESSAF) was prepared. An Environmental Impact Assessment (EIA) Report was prepared by the Ministry of Works in May 2011 and was subsequently disclosed. This EIA assessed impacts associated with the housing reconstruction, new road construction, and land clearing for the new housing. Particular focus was placed on the potential impacts of quarrying of coral construction materials (such as aquatic ecology, sedimentation and coral bleaching) for construction of the new roads.
30. Works contracts required the preparation of Environmental Management Plans (EMPs), and these EMPs were reviewed for compliance prior to disbursement of funds. During the September 2012 supervision mission and the December 2013 ICR mission, the overall status of EMP implementation was found to be good. Some outstanding issues (such as rehabilitation of the sand quarries) were identified in the September 2012 mission. However, these issues had been remedied in the period prior to the December 2013 mission. Other important activities such as the study of the impact of the water supply sub-project on the water lens of the island had also been completed to a high standard and found that the proposed draw down of water will not have any lasting impacts on the lens, or the water table. The additional work carried out as a result of the project restructuring, was also carried out in accordance with the ESSAF and the EIA. EMPs were prepared and implemented during project delivery.
31. The ICR mission found that the impact mitigation and management activities required had been implemented and that the environmental conditions in the project areas, including material source areas, were acceptable. The two areas of concern were (i) The Environmental Compliance Report detailing issues encountered and compliance with safeguard requirements had not been prepared; and (ii) training and capacity building activities relating to the management and maintenance of the septic systems has not been completed.

## **Social Safeguards**

32. OP 4.12 on Involuntary Resettlement was triggered as land was required for the construction of the new houses. Road rehabilitation works were completed within existing rights of way. A Land Acquisition and Resettlement Framework was incorporated into the Environmental and Social Screening and Assessment Framework (Appendix 5) which established the minimum criteria for land acquisition activities. A detailed due diligence report was prepared in May 2011 which clearly defined the process used for acquisition of a proportion of land held by a local Noble and existing leases held by 5 individuals over Crown Land which could be subdivided, allocated and registered for the relocated houses. The Minister for Lands travelled twice to the project site to undertake consultation and discussions with both the beneficiary households and the Noble whose land was being acquired to facilitate the project. All beneficiary households have received legal title to the land upon

which their new house sits. Consultations with individuals and the Village head during the ICR mission confirm that no outstanding grievances remain in relation to land acquisition, compensation or land titling.

### **Financial Management**

33. The FM performance rating was consistently satisfactory until the last review when it was downgraded to Moderately Satisfactory due to inadequate arrangements being in place for the final 6 months of the project and the period after the closing of the project. The project audits for the periods ending 30 June 2011 and 30 June 2012 were both unqualified and the Tonga Audit Office raised no material issues. The 2012/13 project financial statements were submitted to the Tongan Audit Report in December 2013 but the Audit Report has not been received by the Bank at the time of the writing of the ICR. A final audit covering the period from July 1 2013 to the end of the disbursement deadline on April 30 2014 is also required and should be furnished to the Bank no later than 31 December 2014. Interim Financial reports have been received up to and including 31 December 2013. TOP 66,787.05 (US\$ 38,227 equivalent) was previously paid by the project for bitumen that was ultimately not received. The prepayment of this amount prior to receipt of or evidence of the shipment of the bitumen indicated a breakdown in controls procedures. The Government of Tonga had to refund this amount back to the Designated Account.

### **Procurement**

34. Procurement performance rating began at moderately satisfactory due to initial delays in preparation of necessary procurement documents by the PMU. The rating increased to satisfactory, recognizing improved procurement processing. However, the rating was downgraded to moderately satisfactory at the last review due to instances of poor records management and some contract variations being made without the required prior review from the Bank. The scope of repair work at a number of houses and community halls was increased without any formal written site instructions or contract variations having been issued. It should be noted that very slow communications ability between the PMU and the project site contributed to this. These issues were addressed by the MOI providing a report detailing the additional works to the Bank. The costs associated with the additional works were deemed to be eligible on an exceptional basis by the task team after due diligence on the report and site visit were carried out.

### **2.5 Post-completion Operation/Next Phase**

35. For Components 1 and 2, each completed new or retrofitted building was formally handed over to its owner who will be responsible for operation and maintenance of the property. Due to the simple and durable design of the homes and the adaptive skills of the remote NTT community this transition arrangement is appropriate. Support for septic tank maintenance will be provided by Local Government through regular monitoring and maintenance training when required. The only public assets funded by the project that will require operation and maintenance are the reticulated water supply extensions in each of the three villages, and the new access roads and repaired main roads.

36. The water supply in each village is the responsibility of the village water committee. Each committee is expected to take over responsibility for the extended and upgraded supply system of pumps, overhead tanks and underground pipework in its village, having undergone initial training by Tonga Water Board, who designed the upgrading and supervised construction. The routine and periodic maintenance of all roads on the island fall under the responsibility of MOI, which during the resealing program has taken the opportunity to train a number local individuals in the application of sand seal repairs using manual methods, and has left bitumen, sealing materials and equipment (brooms, barrows etc.) on the island for surface repairs as the need arises.
37. The Policy Framework of the Integration of Risk Information in Land-Use Planning, completed towards the end of the project, provides the groundwork for sustaining data sharing arrangements within MLECCNR. It is recommended that the Bank continue to build upon DRM capacity-building efforts started in this project through future targeted operations in Tonga. A capacity and needs assessment of MLSNR (and previous assessments undertaken during the TCERP) revealed multiple opportunities for capacity strengthening, only some of which can be addressed through an emergency operation.

### **3. Assessment of Outcomes**

#### **3.1 Relevance of Objectives, Design and Implementation**

38. **Objectives:** The objectives remain highly relevant to key Outcome Objectives stated in *The 2011-2014 Tonga Strategic Development Framework (TSDF)* and the *2009-2014 National Strategic Planning Framework*, in particular: “Appropriate, well planned and maintained infrastructure that improves the everyday lives of people...” and “...disaster risk management and climate change adaptation, integrated into all planning and implementation of programmes...”. The objectives directly address Tonga’s CAS which aims to build resilience against shocks and are in line with the Pacific Engagement Note for DRR and CCA which emphasises resilient reconstruction, or ‘building back better’ as a key pillar.
39. **Design:** Project activities under all components were highly relevant as they were aligned with long-term priorities outlined in the NTT Priority Tsunami Recovery Program. In addition to physical recovery needs the plan called for an end-to-end review of the DRM process, which Component 3 directly responded to. The restructure further increased the relevance of the project design by addressing evolving needs, in particular by re-sealing roads necessary for the sustainability of the new villages and by the addition of community and commercial buildings in addition to residential buildings. At appraisal it was expected that 40 partially damaged houses would be retrofitted. This number was later increased to 54 to reflect actual needs: 38 residential houses, 7 community halls, 9 commercial buildings. These changes increased the relevance of project design to Tonga’s development objectives by improving the quality of infrastructure supported under the project.

40. **Implementation:** The project was coordinated through the PMU under the guidance of the Niua Development Committee (NDC)<sup>1</sup>, which acted as Project Coordination Committee and was responsible for coordinating all donor-supported programs under the Tsunami Recovery Plan of the GoT. This arrangement was highly relevant to the enabling theme of “Ensuring a more coordinated...approach in Tonga’s partnership with development partners” specified in the current TSDF.

### 3.2 Achievement of Project Development Objectives

41. The first key objective within the PDO was **recovering the living standard of the population living in the island affected by the Tsunami of September 30, 2009, through the reconstruction of residential houses with auxiliary water and sanitation [modified to ‘infrastructure’] facilities in Niutoputapu**. The former part of the objective is higher level and could be deemed to be also dependent on factors beyond the project scope (completion of the new clinic etc.). However the latter part of the objective was successfully achieved through the completion and handing over of the 127 new and repaired buildings to their owners. Prior to the project, the standard of houses that were completely destroyed or partly damaged was low and not build to cyclone resilient standards. As such the immediate living standards of the beneficiaries were improved significantly as a result of the project with improved water and sanitation facilities and more resilient design and location.
42. The cyclone-resilient housing design was a particular success. The new housing design was a modified version of cyclone-resilient houses built in Tonga following Cyclone Issac in 1982. These 30 year-old houses remained essentially undamaged in the Ha’apai group following the recent Cyclone Ian (category 5), despite being surrounded by completely destroyed (albeit newer) houses. A recent social survey of households on NTT indicates a high level of beneficiary satisfaction with new housing, in particular: i) the majority of beneficiaries believe that the conditions of the rebuilt/retrofitted houses are better than pre-tsunami; ii) clean drinking water is readily available; iii) rebuilt housing is more hazard resilient (see Annex 5).
43. The second part of the PDO was **strengthening Tonga’s capacity to address future natural disasters**, and while the building blocks for this were achieved in principle through the Component 3 initiatives to procure mapping equipment and software, undertaking hazard and risk assessment, and completing community risk management plans for NTT, a full objective assessment of such a higher level objective can only be made when the capacity is called upon. The capacity inevitably relies upon more than just the items delivered under the project, and is particularly dependent on the management and coordination capacity to respond to natural disasters. Significant

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<sup>1</sup> This responsibility rested originally with the Niutoputapu Tsunami Committee, a task force established by cabinet following the tsunami. Subsequently the Niutoputapu Tsunami Committee was dissolved and its functions were transferred to the NDC through a cabinet decision on April 28, 2011.

delays in implementation of hazard and risk assessment and community risk planning compromised the ability to fully achieve this objective since technical capacity built through the provision of equipment and training could not be fully reinforced and embedded in national risk management planning processes. In particular, due to delays, risk information generated was not available in time to use in community consultation and preparedness planning. Nonetheless, solid groundwork for institutional capacity strengthening was achieved (see section 3.5b and Annex 2) evidenced in particular by the highly sophisticated and good-quality damage maps recently produced by MLECCNR following Cyclone Ian, using equipment and skills built during the project. It is likely that in the instance of future disasters, Tonga will have stronger capacity to respond effectively, although this is impossible to measure at present.

### **3.3 Efficiency**

44. A conventional economic analysis was not applied to the project due to the difficulties of quantifying the value of damage inflicted by the tsunami and the project benefits associated with relocation and construction on higher ground, and repair of existing buildings in various stages of dilapidation. Further, the small population, extreme remoteness and inaccessibility of the island render a conventional cost / benefit analysis of any investments irrelevant. The project responded to a catastrophe, and was primarily aimed at meeting basic human needs (shelter and water) that had been destroyed by the tsunami. Decisions on whether to include investments could therefore not be driven by an assessment of cost / benefit, but rather by whether the investment would best meet the long-term needs of the population. Hence the decision to add rainwater harvesting facilities to the new houses, albeit at additional cost, thereby reducing demand on the vulnerable fresh water supplies on the island and reducing vulnerability to drought and climate change.
45. The major part (3/4) of the project cost was for the construction of new houses, and the project design carefully considered options for using the most appropriate house type and size, materials and construction methods that would be most easily shipped to and/or assembled in such a remote location with very limited resources, yet be resilient to extreme climatic conditions and long lasting with little or no regular maintenance. Hence the selection of cyclone-resistant timber frame structures on piled foundations.

### **3.4 Justification of Overall Outcome Rating**

Rating: Moderately Satisfactory.

46. The overall rating is based on the relevance of the objectives, the extent to which they were achieved, and the efficiency in doing so. Project objectives remained highly relevant to the current strategic priorities of Tonga and the World Bank. Outputs delivered were largely highly satisfactory although implementation delays reduced potential capacity building outcomes under Component 3 and M&E reporting was poor, thus reducing achievement of objectives to moderately satisfactory. Restructuring of the PDO was to take advantage of emerging development priorities rather than to amend unsatisfactory performance. Based upon the above analysis the



outcome rating both before and after the Board level restructure is moderately satisfactory.

### **3.5 Overarching Themes, Other Outcomes and Impacts**

#### **(a) Poverty Impacts, Gender Aspects, and Social Development**

47. The overall well-being has improved in the locality, especially for the beneficiaries as the new land is fertile and house gardens are growing a variety of plants. The beneficiaries are still able to use their previously occupied land for livestock. The addition of a reliable water supply has also resulted in improved well-being. The Island's Health Officer advised during the ICR Mission that health has improved notably with far fewer vector borne diseases. Although anecdotal, he attributed much of this to the improved access to potable water and improved hygiene and sanitation practices. Improved roads on the island have also improved access, particularly for the elderly and infirm, to the health clinic.
48. 91 local people helped to rehabilitate the island's key road between the port and the airport which provided substantial injection of cash into the island. In consultations held during the ICR mission, beneficiaries advised that this money has been largely spent on improving their homes, solar systems, water supply systems and on their home gardens. Apart from the short term benefits, this can also be expected to have a number of ongoing benefits stemming from the level of ownership of the roads by the people and the residual skills in the community to undertake ongoing maintenance activities.

#### **(b) Institutional Change/Strengthening**

49. Despite the shortened timeframe available to reinforce capacity development, Component 3 strengthened institutional capacity for DRM in three ways:
1. Technical capability and skills for hazard assessment and mapping were increased in the LGIS unit of MLECCR by replacing and upgrading previously outdated and missing equipment and provision of formal and on-the-job training of staff in the use of geospatial technologies, hazard mapping and risk assessments.
  2. The availability and accessibility of improved hazard and risk information was increased. Information was generated for NTT and the whole of Tonga and integrated into land-use recommendations as part of village-level risk plans which previously did not include advanced technical risk information. A policy to guide greater data sharing was established by the end of the project.
  3. Community-level awareness of and preparedness for disasters was increased on NTT by the technical improvement and social reinforcement of three community risk plans and by the installation of international-standard tsunami warning signage. Community ownership of these plans was reinforced by outreach and operational drills. NEMO staff received upskilling in participatory community planning processes by on-the-job training.

**(c) Other Unintended Outcomes and Impacts (positive or negative)**

50. Compliance with environmental and social safeguard requirements has provided opportunities for the project to provide on-going, unanticipated benefits such as improved environmental awareness and education. In particular the benefits and methods of coastal planting could be developed as a part of the school curriculum so that the role of vegetation in coastal rehabilitation can be understood by the school students on NTT.
51. Although sorting out the land issues caused significant delays, the MLECCNR learned important lessons through the process. Following recent Cyclone Ian, the Minister of Lands and survey teams were immediately dispatched to affected areas to document leaseholders for inclusion on damage maps and facilitate land titles for the vast majority of affected properties.

**4. Assessment of Risk to Development Outcome**

Rating: Moderate

52. Technical risks to the sustainability of development outcomes are sufficiently mitigated by the design of investments and by actions already completed during the implementation period. The reconstructed houses are designed to have at least a 20 year lifespan<sup>2</sup> without needing significant maintenance. The design built upon the design of cyclone-resilient houses previously piloted in Tonga, thus addressing some previous shortcomings. Through community involvement during the design and construction phase knowledge and skills have been transferred to the community, as evidenced by some resilient building techniques being replicated by individuals in their own constructions.
53. Some social risks remain, although these do not pose a significant risk to the overall development outcome. Culturally appropriate training in the operation and maintenance of sanitation systems in the new village could not be undertaken by the extended project closing dates due to earlier implementation delays. This may pose a potential sustainability risk to the sanitation arrangements at some houses where the occupants misuse the facilities (for example, using inappropriate cleaning materials and failing to empty septic tanks). However, it is considered to be a mild, medium- to long-term risk since the island community is innovative and self-supporting, and will most likely devise strategies to address any problems that arise in this area. Although this may pose a threat to the output (improved sanitation systems), this risk is unlikely to impact the overall intended outcome, which is a socially appropriate village in a less hazard-prone location.

**5. Assessment of Bank and Borrower Performance**

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<sup>2</sup> Recent experience following Cyclone Ian indicates that the design is able to easily withstand a Category 5 tropical cyclone after 30 years.

## **5.1 Bank Performance**

### **(a) Bank Performance in Ensuring Quality at Entry**

Rating: Moderately Satisfactory

54. The Bank performance was focused on directly responding to the GoT's request for assistance in reconstruction of destroyed and damaged assets on the affected island and the scope of the project reflects this priority. The Bank drew important lessons from the previous emergency-response project in Tonga and accurately assessed the capacity of the local public and private sectors to implement the project. Although in retrospect the Bank team clearly under-estimated the risk to implementation that the protracted land acquisition process would represent, at the time of appraisal it had received assurances that the process was well under way, and since some land had already been acquired it was reasonable to believe these assurances. In addition, capacity building activities complementing the reconstruction investments were not fully aligned with the reconstruction activities and had parallel implementation arrangements adding complexity and delays.

### **(b) Quality of Supervision**

Rating: Moderately Satisfactory

55. The quality of Bank supervision has to be viewed in the context of the extreme remoteness and inaccessibility of the island. Flights to and from the island are infrequent and weather-dependent, and communication is very slow and difficult. As a result, supervision missions were not carried out at regular 6-monthly intervals throughout the first two years of the implementation period. Since land issues (beyond the control of the Bank team) were being resolved during this time, this did not have a significant impact on implementation. However, more regular supervision missions might have reduced delays that occurred during early stages of implementation through closer monitoring of the project and contract management.

56. The Board-level restructure was delayed by staffing changes in the Sydney office. Shortly following the decision to apply for a Board-level restructure, the task team leader, Sector Manager, and Country Director changed. Delays were compounded by Cyclone Evan (December 2012) which stretched the Bank team's limited human resources. Delays were compounded by the failure of the GoT to rapidly prepare necessary environmental safeguards instruments and demonstrate satisfactory implementation arrangements for the new road activities. The delay had little impact on development outcome however, since the GoT agreed to begin preventative road maintenance works and to cover the costs if the restructure was not approved. Works were retroactively financed when the restructure was approved by the Board.

### **(c) Justification of Rating for Overall Bank Performance**

Rating: Moderately satisfactory

57. With ratings of moderately satisfactory for both Quality at Entry and Quality of Supervision, the overall Bank performance rating is also moderately satisfactory. The Bank achieved its design and implementation objectives. The completion date was nine months behind the original schedule although this is not a significant extension period given the emergency nature of the project and highly remote location in which

it was implemented. Both the GoT and islanders are understood to be very satisfied with the outcome of the project.

## **5.2 Borrower Performance**

### **(a) Government Performance**

Rating: Moderately satisfactory

58. The GoT established a Project Coordination Committee (PCC) for the post-tsunami recovery program, chaired by the Minister of Finance and comprising representatives of all agencies involved in implementation of the program namely: MOFNP, Ministry of Works (MOW), MLSNR, the Ministry of Health, the Ministry of Transport and Ministry of Education, Women Affairs and Culture, including NGOs, and the National Emergency Management Office (NEMO). The PCC was nominally responsible for the overall coordination of the Project implementation and achievement of the Project objectives, including all performance indicators not only for this project but also for all other long-term relief and reconstruction projects in NTT. In reality, however, the day-to-day coordination and oversight of the programs was carried out by the NTT Development Committee (NDC) chaired by the Honourable Member for NTT. This committee was very active throughout the implementation period and coordinated well with the PMU. Although shifting management of the additional road activities to the TSCP PMU was a rational and effective arrangement, the GoT was slow in changing the implementation arrangements and proposing a work plan and budget for the final works satisfactory to the Bank, which held up the restructure process.

### **(b) Implementing Agency or Agencies Performance**

Rating: Moderately unsatisfactory

59. During the course of the project, the Ministry of Works (MOW) was restructured and became the Land Transport Division of the Ministry of Infrastructure (MOI). The MOW/MOI was responsible for carrying out all the civil works (land clearing, access roads, resealing main roads etc.) on the island by force account methods, and while the quality of land clearing was good, the quality of the access road construction was unsatisfactory and needed to be resurfaced. TOP 66,787.05 (US\$38,227 equivalent) was paid by the project for bitumen that was ultimately not received. The prepayment of this amount prior to receipt of or evidence of the shipment of the bitumen indicated a breakdown in controls procedures. Two instances of poor contract management were noted where the necessary 'no objection' was not sought for contract variations. There were also some minor shortcomings regarding the timely provision of project documentation. Very limited and slow communications between NTT and the PMU were contributing factors to this.

60. The MLECCNR was responsible for preparing the technical specifications and TORs for the procurement of mapping equipment and engagement of consulting services to implement hazard and risk assessment training as part of Component 3. Delays in procurement of appropriate goods and expertise resulted in this subcomponent being implemented far behind schedule, thus risk information produced under this component could not be used for the development of the community risk management plans.

61. It is on the basis of these factors that implementing agency performance is rated moderately unsatisfactory.

**(c) Justification of Rating for Overall Borrower Performance**

Rating: Moderately Satisfactory

62. Implementation delays, project management limitations and instances of poor contract management reduced the overall Borrower's performance. However, the government displayed strong commitment to achieving the development objectives, evidenced by significant parallel funding from other donors secured to complement activities financed by the IDA grant with other activities outlined in the NTT Priority Tsunami Recovery Plan. The outcome rating given above is in the satisfactory range, justifying the rating of moderately satisfactory given here for overall borrower performance.

**6. Lessons Learned**

**63. General lessons**

The time required for satisfactory land acquisition arrangements to be devised should not be underestimated. Project implementation periods should allow for possible delays. Even though land acquisition arrangements seemed relatively straightforward at appraisal, unforeseen local political issues that are common in a Pacific island context stalled implementation of physical investments. Adequate time should be allowed for land issues to be negotiated in an appropriate way. In some projects it may be appropriate to make completion of land negotiations a condition of effectiveness although in an emergency operation this should be decided on a case-by-case basis since it could hold up implementation of other pressing recovery activities.

64. Implementation period should allow for the logistical challenges of reconstruction in a remote location. Transport impediments (particularly following a major natural disaster such as the 2009 Tsunami) can delay travel of project staff to beneficiary communities and can hold up implementation support missions.

**65. Lessons specific to an emergency operation**

Where a project includes uncommitted funds, the wording of the PDO and the activities specified in the EPP should be carefully considered at appraisal so as not to later preclude the addition of new activities. Priorities in a post-disaster situation can change quickly and the activities agreed upon at the time of appraisal (recorded in the EPP and FA) need to be flexible enough to account for this. In this project, outcomes for C1 and 2 were defined very specifically in the PDO (reconstruction of houses with auxiliary water facilities). This later reduced flexibility to allocate previously uncommitted funds to respond to emerging local priorities (preventative maintenance of a major road) and required a Board level project restructure.

66. Direct linking of all project activities is especially important in an emergency operation. Capacity building activities under component 3 were only loosely linked to reconstruction and recovery activities under the other components and were

implemented by a different ministry. Implementation delays resulted as (stretched) project management staff concentrated their time and efforts on facilitating physical investments that met urgent recovery needs.

## **7. Comments on Issues Raised by Borrower/Implementing Agencies/Partners**

### **(a) Borrower/implementing agencies**

67. The main conclusions of the Borrower's ICR (see Annex 7) are generally in agreement with the World Bank's ICR, especially: i) residents of new and retrofitted buildings are highly satisfied with the quality of accommodation and services; ii) reconstructed and retrofitted buildings are highly disaster resilient; and iii) capacity to address future disasters at a government and community level is increased.

68. There are some instances of less-than-satisfactory implementation and supervision of project activities and project management that are not reflected in the Borrower's ICR, in particular: i) unsatisfactory supervision of initial access road construction completed under force account by the MOI leading to unsatisfactory quality of works that later required resurfacing; ii) instances of poor contract management where the required procurement procedures were not followed; and iii) lack of implementation of the results framework. However, initial delays in land surveying and compensation are well analyzed.

69. The Borrower's ICR cites a 'small and lean PMU' as a model to replicate for future reconstruction projects. At times however, high demands on the PMU from multiple projects resulted in implementation delays (particularly with capacity building activities under Component 3) and contract management issues, as the necessary procurement support from the PMU to implementing agencies was not forthcoming. The lesson "small and lean PMU" is perhaps only advisable when a country has considerable experience implementing World Bank financed projects.

### **(b) Cofinanciers**

### **(c) Other partners and stakeholders**

## Annex 1. Project Costs and Financing

### (a) Project Cost by Component (in USD Million equivalent)

Components	Appraisal Estimate (USD millions)	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
Cyclone-Resistant Housing	3.35	3.729	111%
Building Retrofitting	0.35	0.464	133%
Risk Management Capacity	0.50	0.395	79%
Project Management	0.40	0.533	133%
Unallocated	0.40	0.00	0%
<b>Total Baseline Cost</b>	<b>5.00</b>	<b>5.121</b>	<b>102%</b>
Physical Contingencies	0.00	0.00	0.00
Price Contingencies	0.00	0.00	0.00
<b>Total Project Costs</b>	<b>5.00</b>	<b>5.12</b>	<b>102%</b>
Front-end fee PPF	0.00	0.00	.00
Front-end fee IBRD	0.00	0.00	.00
<b>Total Financing Required</b>	<b>5.00</b>	<b>5.12</b>	<b>102%</b>

### (b) Financing

Source of Funds	Type of Cofinancing	Appraisal Estimate (USD millions)	Actual/Latest Estimate (USD millions)	Percentage of Appraisal
Borrower		0.00	0.00	.00
IDA Grant		5.00	0.00	.00
Total				

## Annex 2. Outputs by Component

ID No	Project Component / Subcomponent	Major outputs	Comments
<b>Component A: Cyclone Resistant Housing Construction</b>			
1.1	Land Surveying, Planning and Allotment	Surveyed planning layouts with allocated plots for beneficiaries	
1.2	Resettlement Compensation	Design report, bid documents, completion report	
1.3	Land preparation	Land cleared in preparation for house and access road construction	
1.4	Housing Material and Construction	Completed houses (73 No) handed over to beneficiaries	At appraisal it was expected that 85 new, cyclone-resilient houses would be constructed at a site further inland with upgraded water and sanitation facilities. This number was later modified to 73 to account for 12 housing units provided by other donors.
1.5	Sanitation	Completed toilet / shower units (73 No) handed over to beneficiaries	No beneficiary training in use of waterborne sanitation
1.6	Rainwater Collection and Tanks	Rainwater harvesting and storage provided for each new house	Piped connection from tank to toilet, shower and basin provided in addition to tap
1.7	Roads for Relocation Areas	New sealed access roads to new houses	Done by MOI under force account. Initial seal cracked, resealed under additional works
1.8	Supervision of Civil Works	Construction supervision by architect and inspector	
1.9	Reticulated water supply	Reticulated water supply	Required due to



ID No	Project Component / Subcomponent	Major outputs	Comments
		connection to new houses	drought conditions resulting in little or no harvested rainwater
1.10	Maintenance of main collector roads	Reseal of main roads	Additional activity added by project restructure. Project-managed by the PMU under the Tonga Sector Consolidated Program
<b>Component B: Building Retrofitting</b>			
2.1	Works for Retrofitting of Existing Buildings	A total of 54 retrofitted and/or completed buildings handed over to beneficiaries	At appraisal it was expected that 40 partially damaged houses would be retrofitted. This number was later increased to 54 to reflect actual needs; 38 residential houses, 7 community halls, 9 commercial buildings.
2.2	Management and Supervision of Retrofitting works	Construction supervision by architect and inspector	
<b>Component C: Risk Management Capacity Strengthening</b>			
3.1	Equipment and Software	Mapping equipment and software procured for MLECCNR  Training for upgraded mapping software completed	
3.2	Hazard and Risk Assessment	Capacity and needs assessment of MLECCNR completed including a review of the capacity of the MLECCNR in producing hazard and risk maps and detailed assessment of the	

<b>ID No</b>	<b>Project Component / Subcomponent</b>	<b>Major outputs</b>	<b>Comments</b>
		<p>equipment, software and training needs of MLECCNR for improved geo-data and risk information management.</p> <p>Formal and on-the-job training in the use of advance geospatial technologies (including GIS and GPS) and in risk and vulnerability assessments for staff of the planning and GIS units of MLECCNR.</p> <p>Recommendations produced for improving formal data sharing arrangements and better interagency collaboration between Planning and GIS units of MLECCNR.</p> <p>MLECCNR supported to procure required hardware and software to improve ability to gather, analyze and disseminate risk information and maps.</p> <p>Hazard and risk information for NTT and the Kingdom of Tonga compiled. Geospatial products updated with regard to land use changes and relocation of affected regions.</p> <p>Improvements to coastal hazard mapping made contributing to a more accurate elevation map of NTT</p> <p>GoT officials trained in DisasterAWARE tool for improved early warning systems</p>	

ID No	Project Component / Subcomponent	Major outputs	Comments
		<p>Policy Framework for Integration of Risk Information into Land-Use Planning developed identifying synergies to incorporate internationally recognized land-use tools as an effective way to mainstream disaster risk reduction into land planning and development processes</p>	
3.3	Community Risk Management Plans	<p>Capacity building of village disaster committees</p> <p>Review and strengthening of three existing village disaster plans including by integrating risk information</p> <p>Testing disaster response arrangements through drills</p> <p>Public awareness campaign</p> <p>Signage installed regarding tsunami evacuation routes</p> <p>Recommendations for improving plans and strengthening community preparedness and understanding of the plans provided to government</p> <p>On-the-job training of NEMO staff by accompanying the consultant on the above activities</p>	<p>The execution of this component varied slightly from the plan envisaged at project preparation. Due to the emergency nature of the project, multiple partners were active in the space during the early stages of the project execution. The original formulation of community risk management plans was undertaken by an NGO during this time. As such, the community DRM plans were not based on the risk information that was generated as a part of the mapping exercise. However the risk information that was generated was later used to review the village level DRM plans</p>

<b>Component D: Project Management</b>			
4.1	Project Management Unit	<p>Technical and financial management and accounting of project implementation. Reporting. Procurement and administration of sub-project contracts</p>	<p>A core team including an experienced Project Manager, a Project Accountant and an Office Assistant with additional support from a supervisory Engineer was put in place until March 2013, when the original activities had been almost entirely completed. From May 2013, the oversight of the additional ongoing activities was transferred to the Tonga Transport Consolidation Project (TSCP) PMU, which reflected the nature of the remaining works, namely rehabilitation of the roads.</p>
4.2	Monitoring and Evaluation	<p>Beneficiary survey of residents of new and retrofitted buildings to evaluate impacts on wellbeing of project activities (undertaken by the borrower)</p> <p>Aide Memoires and ISRs captured progress on PDO and intermediate results</p>	

### **Annex 3. Economic and Financial Analysis**

An economic analysis of the operation is not applicable to an emergency response project such as this. Nevertheless, as stated in the Emergency Project Paper, the provision of housing with water and sanitation facilities is a basic necessity for the affected population of Niuatoputapu. The cyclone-resistant design and relocation away from the risk hazard area will provide additional risk management and long-term benefits to the population.

## Annex 4. Bank Lending and Implementation Support/Supervision Processes

### (a) Task Team members

Names	Title	Unit
Demetrios Papathanasiou	Senior Infrastructure Specialist – TTL	EASNS
Amin Saskai Mohammad	Team Assistant	EACNF
Angela Nyawira Khaminwa	Social Development Specialist	EASER
Carlos Ricardo Escudero	Lead Counsel, Consultant Legal	LEGLA
Changkun Yang	Infrastructure Specialist	EASNS
Colleen Butcher-Gollach	Consultant	EASIN
Edward Anderson	Disaster Risk Management Specialist	EASIN
Josefo Tuyor	Senior Environmental Specialist	EASPS
Glen D’Este	Consultant Transport Specialist	EASNS
John Lowsby	Consultant Engineer	EASIN
Kylie Coulson	Senior Financial Management Specialist	EAPFM
Uzma Sadaf	Senior Procurement Specialist	SARPS
<b>Supervision/ICR</b>		
Demetrios Papathanasiou	Senior Infrastructure Specialist – TTL	EASNS
Michael Bonte-Grapentin	Senior Disaster Risk Management Specialist - TTL	EASNS
Edward Anderson	Disaster Risk Management Specialist	EASIN
John Lowsby	Consultant Engineer	EASIN
Scott Wilkinson	Infrastructure Specialist	EASIN
Josefo Tuyor	Senior Environmental Specialist/Safeguards	EASPS
Victoria Lazaro	Social Development Specialist/Safeguards	EASPS
Sean Michaels	Operations Analyst	EASNS
Ross Butler	Senior Social Safeguards Specialist	EASNS
Stephen Hartung	Financial Management Specialist	EASFM
Cristopher Nunes	Senior Procurement Specialist	EASPR
Olivia Warrick	Disaster Risk Management Specialist/ICR Author	EASNS

### (b) Staff Time and Cost

Stage of Project Cycle	Staff Time and Cost (Bank Budget Only)	
	No. of staff weeks	USD Thousands (including travel and consultant costs)
<b>Lending</b>		
<b>Total:</b>	11.37	41.92
<b>Supervision/ICR</b>		
<b>Total:</b>	16.55	158.13

## **Annex 5. Beneficiary Survey Results**

The below is a summary of a beneficiary survey undertaken by the borrower. The survey consisted of household census, and questions on water supply, drainage and sanitation, land and housing, road conditions, and government responsiveness. A total of 98 households were surveyed, of which 59 had received new housing and 39 had received retrofitted houses. Surveys appear to have been conducted with the household head, with other family members present. The average number of occupants per household was 4.6 and male/female occupancy was even. The survey consisted of closed questions regarding: the availability and quality of water supply, toilet and sanitation facilities; quality of and satisfaction with project-assisted housing; road conditions; and satisfaction with government responsiveness following the tsunami. Survey responses were quantitatively analyzed and presented in a report.

On 21<sup>st</sup> March 2013 a survey was conducted of the main households living in the reconstructed houses and the main households living in the repaired houses to ascertain the impact of the reconstruction and recovery assistance to the affected peoples.

The main conclusions of the survey were:

1. Although there was not much difference in the average number of occupants per household between beneficiary and retrofitting households, data suggests that there was a higher capacity for beneficiary households to accommodate more people thus suggesting that rebuilt houses were bigger or it was just better living conditions compared to pre tsunami houses.
2. All respondents had piped water and are paying for the piped water but very few are getting water from this piped system which would have implications for toilet flushing and other hygienic concerns.
3. Main water storage system is in plastic or concrete tanks which is good condition which suggests that guttering in beneficiary and retrofitting houses are in good order
4. All households have at least 1 water tank
5. Drinking water is readily accessible in both beneficiary and retrofitting households and people are not in the habit of boiling drinking water.
6. Flooding during the rainy season is not a problem for both beneficiary and retrofitted households in the village of Vaipoa, however, it is a slight problem for retrofitted households in Falehau and a major problem for both beneficiary and retrofitted households in Hihifo.
7. All beneficiary households have pedestal toilet with flush cisterns and majority of retrofitted households also have pedestal toilets with flushing cisterns. There are still pit and compost toilet alternatives in existence.
8. Conditions of the houses whether rebuilt or repaired is good and majority of the people agree that it is better than their houses before the Tsunami.
9. Majority are happy with the rebuilt houses and the retrofitted houses with the exception of the retrofitted houses of Falehau and the houses of Hihifo where water gets into the houses during heavy rain.

10. Rebuilt housing are more suited, positioned and conditioned for strong winds and other natural disasters.
11. The village of Hihifo seems to be experiencing the most adverse conditions in the areas surveyed. This due to their being a low lying area and that the majority of them had to be relocated to higher ground.
12. Road conditions in all three villages are in a poor state.
13. Government assistance immediately after the Tsunami and in rebuilding and repairing of houses was good.

Overall the impact of the rebuilding and retrofitting of houses on Niuatoputapu has been majorly positive. It stands to improve the lives of local inhabitants from the feel good factor of new housing to the safety of their homes. An indication is the number of occupants of the newly built houses. Improved family hygiene from pedestal toilets with flushing cisterns are also high on people's list of things they are happy about. People are generally happy and pleased with the outcome of the post tsunami rebuilding project despite a few that are not but the positive impact far outweighs the negative.



**Annex 6. Stakeholder Workshop Report and Results**  
*(if any)*

Not applicable

## **Annex 7. Summary of Borrower's ICR and/or Comments on Draft ICR**

The below is a summary of the Borrower's ICR.

### **(i) Assessment of the operation**

- a. *Objective* - The project development objectives (PDO) constituted an appropriate and timely response to a devastating disaster. The objectives were clearly stated and appropriate given the magnitude and human impact of the disaster on the population of the affected island. They were also realistic, in light of the Bank's previous experience in Tonga and elsewhere with similar disasters, and consistent with the CAS Progress Report. The changes to the PDO at the end of the project were minor and had no material effect on the project implementation
- b. *Design* - The design of this operation took into account the general lessons learned from other post-disaster reconstruction projects and specific lessons learned from the previous Tonga Cyclone Emergency Recovery ICR, all of which have evidently contributed positively to improving the final outcomes of this project.
- c. *Implementation* – One of the principal factors that affected the implementation of the project was the remoteness of the island which is situated some 600km from Nuku'alofa thus posing difficult logistic challenges to be overcome. Regular means of transport to and from the island was lacking and telecommunications are very basic. Despite these extremely difficult conditions the project outcomes were successfully achieved. The contract for construction of 73 new cyclone-resistant houses, water reticulation and retrofitting of damaged buildings was successfully completed with minimal delay or cost overrun. The Ministry of Infrastructure successfully completed access roads to the new villages and repaired the main island road. Although there was a delay in implementing the disaster risk management strengthening component, this also successfully delivered equipment, training and capacity building programs.
- d. *Operational experience* - GoT placed great emphasis placed on social cohesion and close consultation with the affected communities. Together with the lean structure of the Project Coordination Committee (PCC) and the Project Management Unit (PMU), these have contributed to the effective implementation of the Project. The PMU was not only responsible for the management, coordination and supervision of the IDA-funded PTRP activities, but also other components of the Tonga Priority Tsunami Recovery Program (TPTRP) funded by several other donor agencies.

### **(ii) Assessment of the outcome of the operation against the agreed objectives**

- a. *Recovering the living standard of those affected* – The project successfully assisted beneficiaries to restore normal economic and social activities through

the reconstruction of essential housing and basic infrastructure. New roads were also constructed to all the relocated housing areas. The project also improved the quality of life and standard of living for many of the poorest households. All affected parties have accommodation and services that are at least as good as - but generally significantly better than - before the tsunami. The three new weaving houses are being well used by the women for weaving mats as the main economic activity on the island. A significant impact was the large number of local people (over 100, including more than 20 women) who were employed on house and road construction works. It is understood that some of the earnings have been used to further improve the houses and living standards of the beneficiaries. The Health Officer advised that the level of health in the villages had improved notably with far fewer vector borne diseases, attributed to the improved access to potable water and improved hygiene and sanitation practices.

- b. *The reconstruction of residential houses* – Individual householders of new houses received title to their land holding, and unencumbered access to their land, houses and assets. The houses were constructed on higher and safer ground thereby reducing vulnerabilities of the affected families to any future tsunami and storm surge hazards. The standard of construction and general workmanship in both new and existing buildings was very high, as was compliance with the specifications. The houses in the resettlement areas are all in very good condition and the level of sanitation and hygiene are of high standard. Some households continue to make some additions and improvements to the houses, including the construction of separate informal structures to provide additional living areas.
- c. *Auxiliary water / infrastructure facilities* –the provision of rainwater harvesting system/tanks to all the 73 housing units built under the project have reduced the communities' reliance on ground water resource, while the extended reticulated village water supplies, connected to all the new houses, not only provide a more reliable water supply but should also improve the health standards of the communities though the use of more hygienic sanitation facilities- flush toilets and septic tanks. Rehabilitation of the island's main collector road has provided improved land transport for all residents, and specifically improved linkage between the reconstruction areas and social and economic facilities.
- d. *Strengthening Tonga's capacity to address future natural disasters* – The delivery of mapping equipment and software for the MLECCNR, including training on the upgraded mapping software, has been completed. A capacity and needs assessment of the MLECCNR in geospatial data management and developing risk information, and technical assistance in strengthening the capacity of MLECCNR in developing hazard and risk information and incorporating it in land-use planning, have also been provided and completed successfully. Community awareness programs, disaster preparedness planning

and drills have been conducted in all the three communities on Niuatoputapu which now have enhanced community awareness and disaster preparedness. Signage has been installed along the main collector roads to guide/direct people to safer ground in the event of tsunami or storm surge warning. Early Warning Systems have also been installed on all the three villages of this island. There is clear evidence of increased community awareness and disaster preparedness amongst the island's population.

**(iii) Evaluation of the borrower's own performance**

- a. *During preparation* – there were both positives and negatives: i) the National Emergency Management Committees, which include representation from Government, NGOs including churches and the Red Cross, contributed significantly to the more systematic and orderly actions and response by Government to this disaster; ii) the land surveying took longer than expected to be completed for land plots to be allocated and ownership registered in the beneficiaries names; iii) further delay was encountered over compensation demands by the landowners who had originally agreed to surrender their lands, requiring alternative land to be identified (this process, although expedited by Hon. Ma'afu, Minister for MLECCNR, took almost a year to be completed, which caused considerable delays to the start of project implementation).
- b. *During implementation of the operation* - positive factors which contributed to the effective implementation of the project included: i) the able leadership and commitment by the main contractor to effectively plan, coordinate and manage the overall housing reconstruction activities aimed at completion within the contract deadline and budget, ii) the simple and lean structure of the Project Management Unit and the early establishment of the PCC, facilitated smooth operations of project implementation, iii) the close cooperation and support rendered by the Tonga Defence Services and NEMO especially in making available the heavy plants and equipment already on the island to be used by the contractor as and when needed contributed significantly to expediting the implementation of the housing relocation, iv) the prompt response and commitment by the PMU to facilitate and expedite disbursements of funds for the project activities also contributed to minimizing delays on project implementation, v) the close cooperation and support from the local communities especially by the housing beneficiaries in the final clearing of the lands for relocation, and supplying food for the contractor.
- c. *Lessons learned that may be helpful in the future* - From this operation, the lessons learned include: i) the strategic use of local consultants to compliment official government activities to improve transparency and accountability in a cost-effective way should be strongly promoted - the use of local consultants has proven to work well given their local knowledge of the communities, customs and cultures, local networking at the community and government

levels; ii) for small Pacific Island countries such as Tonga, the establishment of a small and lean PMU to coordinate and manage reconstruction project in the event of natural disaster has proven to work well - this model can effectively be replicated in future intervention of similar nature; iii) the use of customary practices, where possible, as identified under the Tonga Cyclone Emergency and Recovery ICR. The use of local labour had major impacts on the local communities in economic terms and in improving skills and its impact on the population's livelihood and potential development has been substantial; iv) Strong and neutral leadership is required to avoid any unfair influence and corrupt practices, particularly in allocation of land and housing; v) forestry and tree crops planting should be strongly promoted to stabilize and regenerate damaged areas following national disasters, more particularly in small and remote islands (restoration of the coral quarrying sites by planting mangroves was implemented under this project).

**(iv) Evaluation of the performance of the Bank**

The intervention of the World Bank in the execution of the Project went beyond just financing the recovery program. It also included its unconditional support in speeding up implementation, issuance of NOL, review and clearance of bid documents, and advices and guidance on both financial management and procurement. Further, the various Implementation Support and Supervision Missions which also made field visits to the project sites and follow up outstanding and/or any other issues to facilitate and speed up procurements and project implementation have been most helpful. The Bank's prompt and positive response to the Tongan Government's request for assistance and in identifying the appropriate financing gap for the Bank's intervention is very much appreciated. Overall, in light of the above, the Bank's performance is rated highly satisfactory.

**(v) Evaluation of the performance of co-financiers and other partners**

Although there was only one co-financier (other than in-kind contributions from beneficiaries); the Tsunami relief fund, which was administered by the Niua Development Committee and co-financed the labour for main island collector road re-surfacing for approximately \$100k, a total of ten other development partners and organizations have also pledged and/or provided support to the NTT Recovery Program as shown. The assistance and support by all the donor partners towards Niuaotupu is gratefully acknowledged:

<b>DONOR</b>	<b>AREA OF SUPPORT</b>	<b>STATUS</b>
EU	New hospital	Design complete
NZAID	School rehabilitation & community services	Completed in 2012
NZ GOVERNMENT	Early warning system	Completed in 2013
JAPAN GOVERNMENT	Upgrading of village water supplies	Completed in 2014???
UN   FAO	Agricultural and fishing	Completed in 2012

		equipment & materials	
	UNDP	Weaving houses	Completed 2011
	WHO	Hospital equipment	Awaiting hospital completion
AUS/TONGA RED CROSS		70 transition shelters + water & sanitation	Completed 2010
CARITAS		20 cyclone-resistant houses + water & sanitation	Completed 2010
ADB		Solar electrification	Under review

**(vi) Description of the proposed arrangements for future operation of the project**

As this project was an emergency response to a specific disaster there is little scope for future operations; i) all the building works have been handed over to their respective owners, who will be individually responsible for their maintenance along with the rainwater tank(s) and the on-site sanitation; ii) the extended water supply in each of the three villages will fall under the responsibility of the village water committee for operation and maintenance, with technical back-up as required from Tonga Water Board; iii) the roads will be responsibility of the Ministry of Infrastructure but local workers have been trained in routine maintenance, and materials and small plant has been left on the island for this purpose; iv) MLECCNR and NEMO will continue to develop the national disaster risk management strategy and operations through their own resources and applications for donor-funded program assistance.

## **Annex 8. Comments of Cofinanciers and Other Partners/Stakeholders**

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## **Annex 9. List of Supporting Documents**

World Bank. 2010. Emergency Project Paper for a Tonga Post Tsunami Reconstruction Project (TPTRP).

World Bank. 2010. Financing Agreement , TPTRP between the Kingdom of Tonga and IDA

World Bank, TPTRP Implementation Status and Results Reports: January 2011; November 2011; May 2013; December 2013

World Bank, TPTRP Aide Memoires: December 2010/January 2011; April 2012; February 2013; November 2013

World Bank. 2011 TPTRP Restructuring Paper (force account)

World Bank. 2013a TPTRP Restructuring Paper (first project extension)

World Bank. 2013b TPTRP Restructuring Paper (second project extension)

World Bank. 2013c TPTRP Restructuring Paper (Board-level restructure)

World Bank. 2012 TPTRP Financial Management Implementation Review Report

World Bank. 2005. Regional Engagement Framework for Pacific Islands 2006-2009

World Bank. 2010. Tonga-Country Assistance Strategy 2011-2014

World Bank. 2014. Pacific Engagement Note for DRR and CCA

Fusitua, M. 2013. Impact Survey Report for the TPSRP (MoF/SSS/01) prepared on behalf of the Ministry of Finance and National Planning, Tonga

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Government of Tonga. 2009. Tsunami Recovery Priority Plan, Niuatoputapu, Kingdom of Tonga

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Taki, M. 2013. Completion Report on Component B.3.1 Disaster and Risk Management Planning

Beca 2012. Geospatial Capacity and Needs Assessment

P.Kava, 2012. Supervision Services for Contracts - A.1.1 Lot 1: Supply & Construction of Cyclone Resistant Housing; A.2.1 Lot 2: Supply and Retrofitting of Residential Buildings, Small Enterprise Buildings and Community Buildings – Final Progress Report

Ministry of Finance & National Planning, 2012. Tonga Post-tsunami Reconstruction Project. Quarterly Report for period October – December 2012

Tonga Water Board, 2013. Extension of Reticulated Water System at Niuatoputapu; Hihifo, Vaipoa and Falehau villages, Project Supervision Report January 2013

