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IMPLEMENTATION COMPLETION AND RESULTS REPORT

ON IDA CREDIT (IDA-51900)

**IN THE AMOUNT OF SDR 19.5 MILLION
(US\$ 30 MILLION EQUIVALENT)**

TO THE

REPUBLIC OF HONDURAS

**FOR THE
DISASTER RISK MANAGEMENT PROJECT**

December 21, 2021

Urban, Resilience And Land Global Practice
Latin America And Caribbean Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective {December 21, 2021})

Currency Unit = Lempira

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US\$ 1.4 = SDR 1

FISCAL YEAR

January 1 – December 31

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ABBREVIATIONS AND ACRONYMS

AECID	Spanish International Cooperation Agency (<i>Agencia Española de Cooperación Internacional para el Desarrollo</i>)
AMHON	Association of Honduran Municipalities (<i>Asociación de Municipios de Honduras</i>)
CAH	National Association of Architects (<i>Colegio de Arquitectos de Honduras</i>)
CAPRA	Central American Probabilistic Risk Assessment
CAT DDO	Disaster Risk Management Development Policy Loan with Catastrophe Deferred Draw Down Option
CCIVS	Flood Control Commission of the Sula Valley (<i>Comisión de Control de Inundaciones del Valle de Sula</i>)
CENAOS	National Center for Atmosphere, Oceanography and Seismic Studies (<i>Centro Nacional de Estudios Atmosféricos, Oceanográficos y Sísmicos</i>)
CERC	Contingency Emergency Response Component
CICH	National Association of Civil Engineers (<i>Colegio de Ingenieros Civiles de Honduras</i>)
CODEL	Local Committee for Emergency Response (<i>Comité de Emergencia Local</i>)
CODEM	Municipal Committee for Emergency Response (<i>Comité de Emergencia Municipal</i>)
COMOT	Municipal Land Use Committee (<i>Comité Municipal de Ordenamiento Territorial</i>)
CONPAH	Confederation of Autochthonous Peoples of Honduras (<i>Consejo Cívico de Organizaciones Populares e Indígenas de Honduras</i>)
COPECO	Permanent Commission of Contingencies (<i>Comisión Permanente de Contingencias</i>)
COSUDE	Swiss Agency for Development and Cooperation
COVID-19	Coronavirus Disease 2019
CPF	Country Partnership Framework
CPS	Country Partnership Strategy
DDI	Disaster Deficit Index
DGOT	General Directorate of Territorial Planning (<i>Dirección General de Ordenamiento Territorial</i>)
DGRH	General Directorate of Water Resources (<i>Dirección General de Recursos Hídricos</i>)
DPL	Development Policy Loan
DRM	Disaster Risk Management
EAP	Emergency Action Plan
ESMF	Environmental and Social Management Framework
FMA	Financial Management Assessment
FONAPRE	National Fund for the Prevention and Response to Emergencies (<i>Fondo Nacional de Preparación y Respuesta a Emergencias</i>)
FY	Fiscal Year
GDP	Gross Domestic Product
GNI	Gross National Income
GOH	Government of Honduras
HDI	Human Development Index
ICR	Implementation Completion and Results Report
IDA	International Development Association
IDB	Inter-American Development Bank

INE	National Statistical Institute (<i>Instituto Nacional de Estadística</i>)
IP	Property Institute (<i>Instituto de la Propiedad</i>)
IPP	Indigenous Peoples Plan
IPPF	Indigenous Peoples Planning Framework
IRM	Immediate Response Mechanism
JICA	Japan International Cooperation Agency
MCPTGR	Characterization and Territorial Planning with Disaster Risk Management Methodology (<i>Metodología de Caracterización y Planeamiento Territorial para la Gestión de Riesgos</i>)
MiAmbiente	Secretary of State for Natural Resources and Environment (<i>Secretaría de Recursos Naturales y Ambiente</i>)
MNIGRD	National Table for Promoting DRM (<i>Mesa Nacional de Incidencia de la Gestión de Riesgos</i>)
MTR	Mid-Term Review
OSI	International Sanitary Offices (<i>Oficinas Sanitarias Internacionales</i>)
PATH	Honduras Land Administration Program (<i>Programa de Administración de Tierras de Honduras</i>)
PCC	Project Coordination Committee
PDO	Project Development Objective
PEM	Municipal Emergency Plan (<i>Plan de Emergencia Municipal</i>)
PIU	Project Implementation Unit
PMDN	Natural Disaster Mitigation Project (<i>Proyecto de Mitigación de Desastres Naturales</i>)
PMGR	Municipal Disaster Risk Management Plan (<i>Plan Municipal de Gestión de Riesgos</i>)
PMOT	Municipal Land Use Plan (<i>Plan Municipal de Ordenamiento Territorial</i>)
RENOT	Territorial Planning Norms Registry (<i>Registro Nacional de Normativas de Ordenamiento Territorial</i>)
SDHJGD	Secretariat for Human Rights, Justice, Government and Decentralization (<i>Secretaría de Derechos Humanos, Justicia, Gobernación y Descentralización</i>)
SDP	Ministry of the Presidency (<i>Secretaría de Estado del Despacho Presidencial</i>)
SDR	Special Drawing Rights
SE	Ministry of Education (<i>Secretaría de Educación</i>)
SEDINAFRO	Ministry of Indigenous and Afro-Honduran Peoples (<i>Secretaría de Desarrollo de los Pueblos Indígenas y Afrohondureños</i>)
SEFIN	Ministry of Finance (<i>Secretaría de Finanzas</i>)
SEIP	Ministry of the Interior and Population (<i>Secretaría del Interior y Población</i>)
SEPA	Procurement Plans Execution System (<i>Sistema de Ejecución de Planes de Adquisiciones</i>)
SEPLAN	Ministry of Planning and External Cooperation (<i>Secretaría Técnica de Planificación y Cooperación Externa</i>)
SERNA	Secretary of State for Natural Resources and Environment (<i>Secretaría de Recursos Naturales y Ambiente</i>)
SIAFI	System for Integrated Financial Administration (<i>Sistema de Administración Financiera Integrada</i>)
SINAGER	National System for Risk Management (<i>Sistema Nacional de Gestión de Riesgos</i>)
SINAP	National Property Administration System (<i>Sistema Nacional de Administración de la Propiedad</i>)

SINIT	National Territorial Information System (<i>Sistema Nacional de Información Territorial</i>)
SORT	Systematic Operations Risk-rating Tool
SURE	Unified Registry System (<i>Sistema Unificado de Registro</i>)
TOC	Theory of Change
UAM	Mass Attention Units (<i>Unidades de Atención Masiva</i>)
UEPEX	Special Module for Project Implementing Units with External Financing (<i>Módulo Especial para Unidades Ejecutoras de Proyectos con Financiamiento Externo</i>)
UNAH	National Autonomous University of Honduras (<i>Universidad Nacional Autónoma de Honduras</i>)
UNDP	United Nations Development Program
UNISDR	United Nations International Strategy for Disaster Reduction
USAID	United States Agency for International Development

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**DATA SHEET****BASIC INFORMATION****Product Information**

Project ID	Project Name
P131094	Disaster Risk Management Project
Country	Financing Instrument
Honduras	Investment Project Financing
Original EA Category	Revised EA Category
Partial Assessment (B)	Partial Assessment (B)

Organizations

Borrower	Implementing Agency
Republic of Honduras	COPECO -Comision Permanente de Contingencias (COPECO)

Project Development Objective (PDO)**Original PDO**

The Project Development Objectives are to support Honduras to: (a) continue strengthening its capacity for integrated disaster riskmanagement at the municipal and national level; and (b) improve its capacity to respond promptly and effectively to an eligible emergency.



FINANCING

	Original Amount (US\$)	Revised Amount (US\$)	Actual Disbursed (US\$)
World Bank Financing			
IDA-51900	30,000,000	26,000,001	23,752,620
Total	30,000,000	26,000,001	23,752,620
Non-World Bank Financing			
Borrower/Recipient	0	0	0
Total	0	0	0
Total Project Cost	30,000,000	26,000,001	23,752,620

KEY DATES

Approval	Effectiveness	MTR Review	Original Closing	Actual Closing
13-Dec-2012	18-Mar-2013	16-May-2016	30-Apr-2019	30-Jun-2021

RESTRUCTURING AND/OR ADDITIONAL FINANCING

Date(s)	Amount Disbursed (US\$M)	Key Revisions
22-Apr-2014	2.24	Change in Components and Cost Cancellation of Financing
02-Sep-2015	5.65	Change in Institutional Arrangements
08-Apr-2019	14.99	Change in Results Framework Change in Components and Cost Change in Loan Closing Date(s) Reallocation between Disbursement Categories Change in Implementation Schedule
10-Jun-2020	19.01	Change in Results Framework Change in Components and Cost Change in Loan Closing Date(s) Reallocation between Disbursement Categories
18-Dec-2020	23.37	Change in Loan Closing Date(s)



KEY RATINGS

Outcome	Bank Performance	M&E Quality
Highly Satisfactory	Satisfactory	Substantial

RATINGS OF PROJECT PERFORMANCE IN ISRs

No.	Date ISR Archived	DO Rating	IP Rating	Actual Disbursements (US\$M)
01	03-Apr-2013	Satisfactory	Satisfactory	0
02	06-Nov-2013	Satisfactory	Satisfactory	1.01
03	24-May-2014	Satisfactory	Satisfactory	2.24
04	23-Dec-2014	Satisfactory	Satisfactory	4.37
05	08-Jun-2015	Satisfactory	Satisfactory	5.65
06	09-Dec-2015	Satisfactory	Satisfactory	7.40
07	16-Jun-2016	Satisfactory	Moderately Satisfactory	8.46
08	20-Dec-2016	Satisfactory	Moderately Satisfactory	9.65
09	19-Jun-2017	Moderately Satisfactory	Moderately Satisfactory	10.61
10	06-Dec-2017	Moderately Satisfactory	Moderately Unsatisfactory	11.91
11	14-Jun-2018	Moderately Satisfactory	Moderately Unsatisfactory	12.82
12	20-Dec-2018	Moderately Satisfactory	Moderately Unsatisfactory	14.48
13	07-Jun-2019	Moderately Satisfactory	Moderately Satisfactory	15.35
14	19-Dec-2019	Moderately Satisfactory	Moderately Satisfactory	18.04
15	24-Jun-2020	Moderately Satisfactory	Moderately Satisfactory	19.34
16	01-Mar-2021	Satisfactory	Satisfactory	23.93

**SECTORS AND THEMES****Sectors**

Major Sector/Sector	(%)
Public Administration	21
Sub-National Government	12
Other Public Administration	9
Information and Communications Technologies	10
ICT Infrastructure	10
Transportation	9
Other Transportation	9
Water, Sanitation and Waste Management	60
Public Administration - Water, Sanitation and Waste Management	16
Other Water Supply, Sanitation and Waste Management	44

Themes

Major Theme/ Theme (Level 2)/ Theme (Level 3)	(%)
Finance	25
Finance for Development	25
Disaster Risk Finance	25
Urban and Rural Development	75
Disaster Risk Management	75
Disaster Response and Recovery	25
Disaster Risk Reduction	25
Disaster Preparedness	25

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I. PROJECT CONTEXT AND DEVELOPMENT OBJECTIVES

A. CONTEXT AT APPRAISAL

Country Context

1. At project appraisal in 2012, Honduras, a lower-middle-income country, had an estimated population of 8.6 million¹, with a Gross National Income (GNI) per capita of US\$ 1,970². The country faced significant development challenges, with 66.5% of the households living below the poverty line and 46% in extreme poverty³, with increasing land degradation and low agricultural productivity being major drivers of Honduras' rural poverty⁴. Despite this, Honduras' growth outlook was positive: Honduras had experienced a moderate recovery following the 2008-2009 global economic crisis, with Gross Domestic Product (GDP) growth of 3.7% in 2010, 3.8% in 2011, and 4.1% in 2012⁵.
2. Efforts to sustain economic growth and reduce poverty in Honduras had been hindered by the country's high vulnerability to natural hazards, including hurricanes, tropical storms, floods, droughts, earthquakes, and landslides. In 1998, the impact of Hurricane Mitch was particularly devastating, affecting 90% of the country, impacting approximately 6.2 million people, causing 7,007 deaths, and reducing the human development index (HDI) of the country⁶. Following this disaster, the Government recognized the importance of shifting from a response focus to one of prevention and mitigation. In 2000, the World Bank-financed Natural Disaster Mitigation Project (*Proyecto de Mitigación de Desastres Naturales, PMDN, P064913*) was launched to support this shift. In 2007, the World Bank approved an Additional Financing of the PMDN (P105386) to further support Honduras in its efforts in disaster risk management (DRM). Despite the success of the PMDN, poverty, urbanization, environmental degradation, and climate change continued to contribute to the country's high vulnerability to natural hazards.

Sector Context

3. By Appraisal, Honduras had taken significant steps at the national level to advance the institutional and policy framework for DRM including (i) the Honduran Permanent Commission of Contingencies (*Comisión Permanente de Contingencias, COPECO*), that sought to strengthen institutional capacity, prevention, recovery, and reconstruction, and (ii) the National System for Risk Management (*Sistema Nacional de Gestión de Riesgos, SINAGER*) law (passed in 2009) to manage Honduran policies related to mitigation, preparedness, response, recovery, and international humanitarian assistance. SINAGER provides the legal framework for DRM and incorporates DRM within the national development context while also promoting strong citizen participation in DRM decision-making. Furthermore, the Ministry of Planning and External Cooperation (*Secretaría Técnica de Planificación y Cooperación Externa, SEPLAN*), in 2009 was established to manage regional territorial planning, early warning systems, and disaster recovery.
4. During the period from 2000-2010, with support from the PMDN project, significant progress in DRM had been achieved at the municipal and community level with the roll-out of a successful participatory methodology that engaged local authorities and communities in identifying risks and preparing local plans, including Municipal Land Use Plans (*Planes Municipales de Ordenamiento Territorial, PMOTs*), Municipal Disaster Risk Management Plans

¹ 2012 Honduras Population. <https://data.worldbank.org/indicator/SP.POP.TOTL?locations=HN>

² 2012 World Development Indicators database (Atlas Method). https://data.worldbank.org/indicator/NY.GNP.PCAP.CD?name_desc=false&locations=HN

³ 2012 Country Indicators. Statistics National Institute (Instituto Nacional de Estadística, INE).

<https://www.ine.gob.hn/publicaciones/cifrasdepais/cifras%20de%20pais%202012.pdf>

⁴ Country Partnership Strategy for the Republic of Honduras for FY2012-2014 <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/580301468282846558/honduras-country-partnership-strategy-for-the-period-fy2012-2014>

⁵ Honduras GDP growth (annual %). <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?end=2020&locations=HN&start=2010&view=chart>

⁶ CEPAL (1999). Honduras, evaluation of damages caused by Hurricane Mitch (*evaluación de daños ocasionados por el Huracán Mitch*).

⁷ Hurricane Mitch. A look at some thematic trends for risk reduction (*Una mirada a algunas tendencias temáticas para la reducción del riesgo*).

https://www.preventionweb.net/files/4095_Mitch.pdf



(*Planes Municipales de Gestión de Riesgos, PMGRs*), and Municipal Emergency Plans (*Planes de Emergencia Municipal, PEMs*). PMOTs included land-use guidelines that informed public and private investment decisions. Additionally, national, municipal, and local level coordination and information exchange had been made more effective through the development of Municipal Committees for Emergency Response (*Comités de Emergencia Municipal, CODEMs*) and Local Committees for Emergency Response (*Comités de Emergencia Local, CODELs*).

5. Despite these advances, several gaps in the DRM sector were identified at Appraisal. These included the need to: (i) strengthen the capacity of national institutions, including COPECO, whose mandate had expanded without commensurate capacity built and budget allocation, and SEPLAN, a relatively new ministry; (ii) increase the understanding of the underlying causes of disaster risk from an environmental perspective; (iii) generate new and publicly available information on disaster risk to support decision-making to reduce risks; (iv) improve local capacity in DRM and invest in mitigation measures given the number of people living in high-risk areas; (v) adopt disaster risk financing strategies to manage fiscal vulnerability and provide rapid access to funds post-disaster; and (vi) develop risk reduction strategies that mainstream prevention and mitigation issues into key sectors such as transport, water and sanitation, and energy.

Rationale for World Bank Support

6. This project was part of a historic and continuous support from the World Bank to the country's DRM efforts, and in particular to the SINAGER and COPECO over the past 23 years. The World Bank had forged a strong partnership with Honduras following Hurricane Mitch (1998). This partnership was further strengthened through the PMDN project in 2000 as well as its additional financing in 2008, which had successful results and impact. The Government of Honduras (GoH) then requested the Disaster Risk Management Project (PGRD, being evaluated in this ICR), to further strengthen the outcomes achieved under the PMDN and address remaining gaps. The PGRD also complemented existing Bank Projects that addressed multisectoral risks, including climate, crime, violence, poverty, and social exclusion in Honduras, such as the Second Land Administration Project (PATH II, P106680), the Barrio-Ciudad Project (P088319), and the Safer Municipalities Project (P130819). The World Bank currently continues supporting COPECO and SINAGER the first Cat DDO (FY20, P172567, that has a pillar focusing on COPECO) as well as through the second Cat DDO (P177001, currently in preparation, with a pillar on the SINAGER reform, reinforcing COPECO's central role in it). In addition to the Cat DDOs, the World Bank also approved in FY21 the Tropical Cyclones Eta and Iota Emergency Recovery Project (P175977) aiming at support Honduras' response and recovery needs and strengthening institutional capacity to manage a resilient and inclusive recovery and reconstruction. Finally, in support of all these financing operations, a suite of Technical Assistances has also been extended to the GoH over the past few years (Disaster Risk Financing TA, Urban Resilience and Hydromet TA, Hands-on Implementation Support to the Emergency Recovery Project TA).

Project Contribution to Country Higher-level Objectives and CPS Objectives

7. The Project was consistent with the World Bank Group (WBG)'s Country Partnership Strategy (CPS - Report No. 63370-HN) for FY2012-2014, which had three strategic objectives: (i) Improving citizen security, (ii) Expanding opportunities through reducing vulnerabilities, and (iii) Enhancing good governance. The Project contributed to the achievement of the second objective, which was related to improving fiscal management, investment climate, competitiveness, and more effective disaster risk management. It remained relevant to Pillar 3: "Reducing Vulnerabilities" of the WBG's Country Partnership Framework (CPF) for FY16-FY20. The Project also contributed to supporting the third objective by promoting citizen participation in local planning and decision-making. In addition, the Project was aligned with Honduras' Country Vision for 2010-2038 and the National Plan for 2010-2022, each of which contains pertinent provisions for DRM, elevating them to national laws, and recognize the link between environmental degradation, high poverty levels, and increased vulnerability to natural disasters. Specifically, the



National Plan includes goals and objectives to strengthen resilience, mitigate risks, and improve the DRM legal, institutional and planning frameworks, and enforcement mechanisms. The Country Vision seeks to achieve these objectives by consolidating regional development under an environmentally sustainable process.

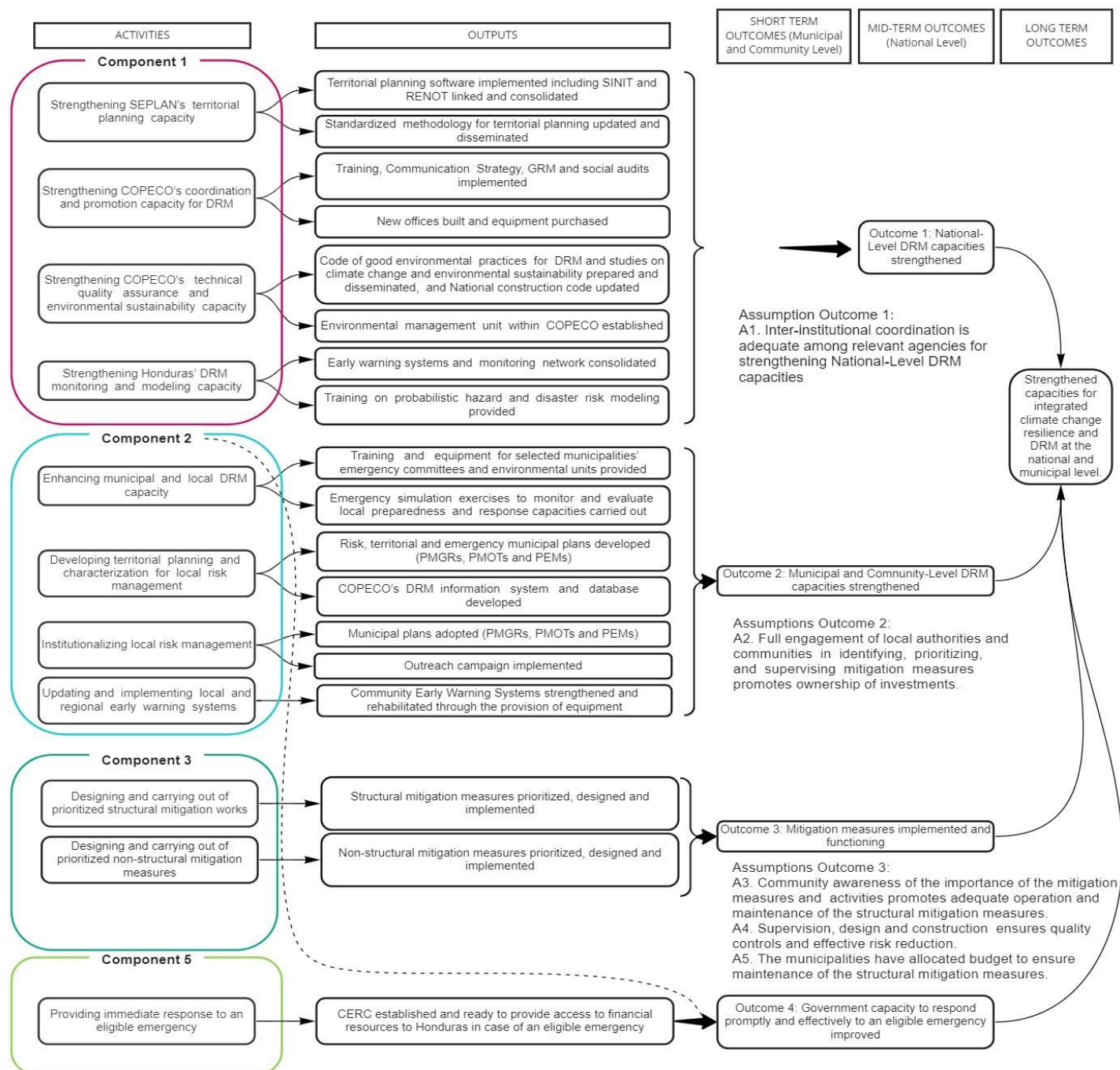
Theory of Change

8. The Project Appraisal Document (PAD) did not include a Theory of Change (ToC); however, it is possible to articulate the underpinning design logic from the stated outcomes, outputs, and activities. Figure 1 below reflects the implicit ToC. The ToC considers that the Project was designed to address Honduras' long-term objectives of strengthening the country's resilience to natural hazards and improving the DRM legal, institutional, and planning frameworks, building off the achievements of PMDN, which had established a solid base for DRM in the country.
9. The main outcomes the project sought to achieve were (i) National-level DRM capacities strengthened, (ii) Municipal and Community-level DRM capacities strengthened, (iii) Mitigation measures implemented and functioning, and (iv) Government capacity to respond promptly and effectively to an eligible emergency improved. The first three outcomes would result from the interventions and outputs included in Components 1, 2, and 3; i.e., it would be achieved by strengthening DRM institutions and policy-making, enhancing coordination between central institutions and key municipal and local actors, incorporating DRM in territorial planning with a participatory methodology, implementing structural and nonstructural mitigation measures in 20 municipalities, and ensuring social inclusion, technical quality, and environmental sustainability. And the fourth outcome, "Capacity to respond promptly and effectively to an Eligible Emergency improved," would result mainly from the interventions and outputs included in Component 5 (through the activation of the CERC to respond to eligible emergencies). Component 4 is not mentioned in the ToC because it is not part of the achievement of the project outcomes; only the project management and monitoring and evaluation were financed under this component.
10. Critical assumptions underlying the ToC materialized and contributed to project's success, especially since the Government provided effective inter-institutional coordination, and the Municipalities and Communities gave their support to the implementation of Project activities (see Figure 1): The assumptions were:
 - A1. Inter-institutional coordination is adequate among relevant agencies for strengthening National-Level DRM capacities: this is a necessary condition for national strengthening and effective implementation of policies and DRM instruments.
 - A2. Full engagement of municipal authorities and communities in identifying, prioritizing, and supervising mitigation measures promote ownership of investments: without ownership of investments by municipal authorities and communities, sustainability of implemented measures is not possible.
 - A3. Community awareness of the importance of the mitigation measures and activities promotes adequate operation and maintenance of the structural mitigation measures: without community awareness, deterioration of the implemented measures is more likely. Communities also play an important role in maintenance, not only directly participating in the maintenance plans but also overseeing them.
 - A4. Supervision, design, and construction ensure quality controls and effective risk reduction: the quality of the structural mitigation works and their effective impact on risk reduction depend on adequate supervision, design, and construction.
 - A5. The municipalities have allocated budget to ensure maintenance of the structural mitigation measures: sustainability of structural measures and the risk reduction that they provide depends on the implementation of adequate maintenance plans for which budget must be allocated.



Figure 1. Theory of Change

The Project Development Objectives are: (a) continue strengthening Honduras' capacity for integrated disaster risk management at the municipal and national level; and (b) improve its capacity to respond promptly and effectively to an eligible emergency.





Project Development Objectives (PDOs)

11. The Project Development Objectives are to support Honduras to: (a) continue strengthening its capacity for integrated disaster risk management at the municipal and national level; and (b) improve its capacity to respond promptly and effectively to an Eligible Emergency. The PDOs were stated consistently in the PAD and Financing Agreement.

Key Expected Outcomes and Outcome Indicators

12. In this ICR, the assessment of the PDOs is organized around each outcome captured in the PDO statement and Theory of Change. Therefore, each of the outcomes linked to the PDO-Level indicators (at Appraisal⁸) used to assess their achievement are presented in Table 1 below:

Table 1. Key Outcomes by PDO-Level Indicators⁹

Outcome 1: National-level DRM capacities strengthened	
PDO-Level Indicator	[1] Direct project beneficiaries [Core] (specifying the percentage of female beneficiaries). [2] A representative sample of direct Project beneficiaries (and sampled female beneficiaries) are satisfied with COPECO's DRM Project activities [third level on a four-level scale].
Outcome 2: Municipal and Community-level DRM capacities strengthened¹⁰	
PDO-Level Indicator	[3] Participating municipalities have adopted DRM Plans (PMGRs), Land Use Plans (PMOTs) ¹¹ and Emergency Plans (PEMs) based on the Project's participatory methodology.
Outcome 3: Mitigation measures implemented and functioning	
PDO-Level Indicator	[4] Mitigation measures financed by the Project are evaluated independently as technically, economically, and environmentally sound ¹² .
Outcome 4: Government capacity to respond promptly and effectively to an eligible emergency improved¹³	
PDO-Level Indicator	[5] Time taken to disburse funds requested by Government for an eligible emergency.

Components

13. The Project consisted of the following five components:

⁸ The PDO-level Indicators at Appraisal and after the five Project restructurings were similar, as described in *Section B. Significant Changes During Implementation*.

⁹ See in Annex 1, Table 1, the outcomes linked to the revised PDO-Level and Intermediate Indicators (at closing).

¹⁰ In the 2019 Restructuring, a new core PDO Level Indicator was added in this outcome: "[4] Cities with improved livability, sustainability, and/or management".

¹¹ After the reorganization of SEPLAN, the land use plans (PMOTs) are captured under the Municipal Development Plan, which is measured separately in a new Intermediate results indicator [2.4].

¹² The word "sound" was replaced in the 2019 Restructuring for "satisfactory or above". Satisfactory is defined as achieving a level of at least 4 on a 5 level-scale.

¹³ The government's capacity to respond to emergencies was also improved through the institutional strengthening activities of the Project, shown in Component 2 (See the dotted line in the Theory of Change).



14. **Component 1: Strengthening of National-level DRM Capacities [Estimated cost US\$2.20 million, Revised cost US\$4.70 million (June 2020 restructuring), Actual cost¹⁴ US\$4.47 million].** This Component aimed to consolidate the institutional and policy framework for DRM within territorial planning, support improved DRM coordination at the national and community level, and build the technical capacity of COPECO and SEPLAN / the General Directorate of Territorial Planning (*Dirección General de Ordenamiento Territorial, DGOT*). It also aimed to increase environmental sustainability and improve risk monitoring and modeling by supporting the Secretary of State for Natural Resources and Environment (*Secretaría de Recursos Naturales y Ambiente, MiAmbiente*). These objectives were achieved inter alia through training, equipment, software, studies, a communication strategy, and the establishment of a grievance redress mechanism.
15. **Component 2: Strengthening of Municipal and Community-level DRM Capacities [Estimated cost US\$2.90 million, Revised cost US\$4.30 million (June 2020 restructuring), Actual cost US\$4.25 million].** This Component aimed to support the continued strengthening of municipal and community DRM capacity. This was achieved by providing capacity-building support to CODEMs and CODELs, promoting the participatory methodology of engaging communities in DRM, incorporating DRM in territorial planning, land use, and emergency plans, institutionalizing risk management in local planning, and improving local monitoring and early warning systems. This also was achieved through training, purchasing of equipment and software, emergency simulation exercises, studies on risk and territorial planning, the development of a DRM Geoportal, and outreach activities.
16. **Component 3: Implementation of Mitigation Measures [Estimated cost US\$13.05 million, Revised cost US\$13.70 million (June 2020 restructuring), Actual cost US\$11.76 million].** This Component focused on reducing local vulnerability to natural hazards through the design and implementation of structural and nonstructural measures. The identification of the structural risk mitigation measures (i.e., physical construction such as riverbank protection and/or drainage) was through activities undertaken in Component 2. A participatory approach was adopted throughout the project cycle (design, implementation, supervision of the works). Nonstructural measures included workshops on environmental (climate change), social (gender), and technical (DRM) aspects. Nonstructural measures were prioritized for Indigenous Peoples and Afro-Descendant communities.
17. **Component 4: Project Management, Monitoring and Evaluation [Estimated cost US\$1.85 million, Revised cost US\$2.77 million (June 2020 restructuring), Actual cost US\$2.82 million].** This Component supported capacity building in project management and monitoring and evaluation (M&E). It covered costs associated with project administration, the hiring of firms to conduct the Baseline, Mid-Term Review, and Final Evaluation (to assess the Project's progress, as well as social, environmental, and economic impacts), audits, and oversight for the communication and gender strategies.
18. **Component 5: Contingency Emergency Response Component – CERC [Estimated cost US\$10.00 million, Revised cost US\$0.53 million (June 2020 restructuring), Actual cost US\$0.42 million].** This Component aimed to provide immediate liquidity to the Government to respond to an eligible emergency. At Appraisal, the CERC had an allocation of US\$10 million, and decreased to US\$6 million in 2014 per request of the government. From there, CERC funds were reallocated to Components 1, 2, 3, and 4 during the April 2019 Restructuring. The CERC was triggered twice, in June 2020 and in May 2021, for the Government's response to the COVID-19 pandemic and Tropical Cyclones Eta and Iota, respectively, with a total of US\$0.53 million uncommitted funds.

¹⁴ The "Actual costs" referred to in this section are the budget execution as of July 31, 2021.



19. **Total Project Cost** (Annex 3): [Estimated cost US\$30.00 million, Revised cost US\$26.00 million (April 2014 restructuring), Actual cost US\$23.72 million (July 31, 2021)]. The Bank-financed 100% of project costs. At Appraisal, the estimated cost for all project components was **SDR19.5 million** (US\$30.00 million equivalent).
20. **Project Implementation Arrangements.** The Project's implementing agency for Components 1-4 was COPECO. According to the CERC Operations Manual, the Coordinating Authority that managed Component 5 (CERC) was the Ministry of Finance (SEFIN), which is also the entity that identifies the projects where the CERC will be activated in the event of an eligible disaster or emergency. According to the two Emergency Action Plans (EAPs) -one in response to the COVID-19 pandemic and another to support the Government in the country's recovery due to the Tropical Cyclones Eta and Iota-, SEFIN appointed COPECO-PGRD to implement both EAPs. A Project Implementation Unit (PIU) was established within COPECO, under a Coordinator with operational and administrative autonomy, reporting directly to the Minister-Commissioner of COPECO. The PIU administered all the Credit's resources. The Project included the following co-executing agencies: SEPLAN, MiAmbiente (former *SERNA*), and the Association of Honduran Municipalities (AMHON), who were part of a Project Coordinating Committee (PCC), presided by COPECO's Minister-Commissioner.

B. SIGNIFICANT CHANGES DURING IMPLEMENTATION

21. **There were five restructurings during the project life cycle.** The **first Restructuring (April 22, 2014)** canceled US\$4 million of the IDA Credit from the CERC component, which was made available to the Honduras and Nicaraguan Catastrophe Risk Insurance project (P149895). The **second Restructuring (September 2, 2015)** reflected the new organizational structure of the Government following the elections and a new administration¹⁵. The last three restructurings are presented in the next 2 sub-sections.

Revised PDOs, Outcomes, PDO-level Indicators, and Intermediate Results Indicators (Annex 1, Table 2)

22. The PDOs and the Outcomes remained the same during the Project's life. However, there were several adjustments to the PDO-level Indicators (PDO-LI) and Intermediate Results Indicators (IRI) in the two following project restructurings.
23. To reflect the recommendations agreed during the Mid Term Review (MTR), a **third Restructuring (April 8, 2019)** of the project resulted in several significant changes, including a reallocation of funds from the CERC Component to all other Components, as well as a change in component costs, an extension of the closing date (first project extension of 14 months), from April 30, 2019, to June 30, 2020, and several revisions to the results framework (see below and Annex 1, Table 2):
 - The targets of four PDO-LI and four IRI were scaled up given the number of municipalities expected to be reached due to the extension of the closing date, such as:
 - [PDO-LI 1] Direct project beneficiaries were increased from 850,000 to 1,285,000.
 - [PDO-LI 2] The representative sample of direct project beneficiaries satisfied with COPECO's DRM Project activities increased from 70% to 85% (increasing from 70% to 85% the sample of women beneficiaries).

¹⁵ DGOT moved from SEPLAN to the Ministry of the Presidency (*Secretaría de Estado del Despacho Presidencial, SDP*); (ii) *SERNA* became *MiAmbiente*; and (iii) The Ministry of the Interior and Population (*Secretaría del Interior y Población, SEIP*) became the Secretariat for Human Rights, Justice, Government and Decentralization (*Secretaría de Derechos Humanos, Justicia, Gobernación y Descentralización, SDHJGD*).



- [PDO-LI 3] The number of participating municipalities adopting PMGRs and PEMs based on the Project's participatory methodology increased from 16 to 18.¹⁶
- [PDO-LI 5] The percentage of a representative sample of mitigation works is assessed independently as technically, economically, and environmentally satisfactory or above, increased from 85%¹⁷ to 90%. The original indicator stated: "At least 90% of mitigation measures financed by the Project are evaluated independently as technically, economically, and environmentally sound¹⁸", which instead of evaluating 90% of all the works, it was changed to evaluate at least 90% of a representative sample of those works. However, during the MTR and final evaluation, 100% of the works were assessed.
- [IRI 2.1] CODEMs and CODELs established and functioning effectively: increased from 60 to 100.
- [IRI 2.2] At least 85% of sampled technical staff from municipalities rate training received under the Project as Satisfactory: increased from 70% to 85%.
- [IRI 2.4] Participants in consultation activities during project implementation: increased to 14,094 (no target was added at appraisal).
- [IRI 3.3] Percentage of a sampled direct beneficiaries that rate structural mitigation measures implemented as satisfactory: increased from 70% to 85%.
- A new core PDO-LI was added: "[4] Cities with improved livability, sustainability, and/or management", to measure the cumulative number of cities or municipalities for which the direct interventions of the project have resulted in improvements in (a) living conditions for residents; (b) financial, economic, environmental, and/or social sustainability of the city; and/or (c) city planning, systems, and governance.
- The IRI "[1.2] Environmental Management Unit operating effectively in COPECO" was deleted because its original objective was to foresee compliance with environmental protection measures in the implementation of the mitigation works, and with the creation of MiAmbiente, an environmental license was provided for each work; thus, there was no need to create an Environmental Unit in COPECO for this purpose.
- Four new IRI were added to: (i) reflect the number of annual climate and meteorological reports/bulletins issued by the COPECO-CENAOS [IRI 1.2], (ii) reflect the number of municipalities with new and/or updated municipal planning or management tools with a risk management approach [IRI 2.4]; (iii) include the number of community early warning systems strengthened/rehabilitated [IRI 2.6]; and (iv) capture the results related to nonstructural mitigation measures [IRI 3.2].
- The IRI "[1.3] Seismic monitoring network established and functioning" was revised to "[1.3] Hazard-monitoring stations collecting and transmitting data". This indicator was revised to include not only seismic but hydromet monitoring stations equipped and collecting and transmitting data. Therefore, the unit of measure changed from percentage (target 100) to number (new target: 42).
- At appraisal, 60 mitigation measures were planned without clarifying the number of structural and non-structural works. Therefore, through this restructuring, the IRI "[3.1] Prioritized mitigation measures implemented" was revised to separate the targets for the implementation of 40 structural mitigation measures [IRI 3.1] and 20 non-structural mitigation measures [IRI 3.2, new indicator].

24. Fourth Restructuring (June 10, 2020). Through this restructuring, (i) the project's closing date was extended from June 30, 2020, to December 31, 2020 (second extension of 6 months) to be able to finish the five mitigation works that were delayed by the COVID-19 shutdown, (ii) a new CERC-related Intermediate Indicator was added, and credit

¹⁶ After the reorganization of SEPLAN, the PMOT was captured under the Municipal Development Plan. Therefore, the word "PMOT" was deleted from the original indicator, and due to the 2019 Restructuring it was measured separately in a new Intermediate Results Indicator (2.4).

¹⁷ There is an error on page 18 of the PAD, as the ninth column named "End target" has 85%, and the indicator name starts with "At least 90%...". Also, the Cumulative Target Value (eighth column) is 90%. This error was corrected in the April 2019 project restructuring.

¹⁸ The word "sound" was replaced for "satisfactory or above". Satisfactory was defined as achieving a level of at least 4 on a 5 level-scale.



proceeds were reallocated between disbursement categories to finance CERC expenditures and revise the component costs; and (iii) the Project's macroeconomic, institutional capacity for implementation and sustainability, and other risks were revised considering the challenges due to the COVID-19 pandemic.

25. The Operations Manual for the CERC was updated on March 15, 2020, and received the Bank's No Objection on March 25, 2020, and the Emergency Action Plan (EAP) dated May 8, 2020, was prepared jointly by the Ministry of Health (SESAL), COPECO and SEFIN to respond to the COVID-19 pandemic. These actions established the eligibility of the emergency to trigger the CERC under the Project, and the Government requested its activation (letter dated May 14, 2020 and received on May 25, 2020) for US\$ 533,124 in uncommitted funds from the Project to support the implementation of the EAP and finance activities to complement ongoing efforts in the COVID-19 pandemic response. On June 2, 2020, the Bank accepted the evidence provided in fulfillment of the conditions for withdrawal of credit proceeds to respond to the eligible emergency and approved the activation of the CERC. Therefore, through this restructuring, a new Intermediate Indicator was added: "International Sanitary Offices (*Oficinas Sanitarias Internacionales – OSI*) and Mass Attention Units (*Unidades de Atención Masiva – UAM*) prioritized for COVID-19 response supported by COPECO" to capture the key EAP activities.

Other significant changes

26. The **fifth and final Restructuring (December 18, 2020)** extended the closing date from December 31, 2020, to June 30, 2021, following Tropical Cyclones Eta and Iota, which struck the country between November 5 and 18, 2020, and resulted in delays and damage to the minor refurbishment works in the 12 selected UAMs and OSIs (planned in the June 2020 CERC activation), which were suspended by the PIU given that the tropical storms significantly affected most of them. In addition, access to the sites of the 3 remaining structural mitigation measures became difficult owing to the impact of the storms. Therefore, in order to complete the project activities mentioned, which were fully financed by the Project's uncommitted funds, an extension of the closing date was approved. This was the third extension of the Project's closing date that entailed a cumulative extension of 26 months from the original closing date.
27. Another significant change was the shift from Moderately Satisfactory (MS) to Moderately Unsatisfactory (MU) in the Implementation Progress (IP) rating at the end of 2017 and back to MS in 2019. The IP was adversely affected by a series of events that led to a slowdown in the execution of project activities, resulting in a MU rating from December 2017 to December 2018. The MU rating was attributed to political turmoil and social unrest following the 2017 presidential elections, which impacted the activities in the Project area. Also, the project's lack of Government budget allocation significantly limited disbursements in the first three years of implementation. In 2019, the Project was progressing towards achieving the PDO, and its IP rating changed from MU to MS.

Revised Components

28. The Components remained the same throughout the Project's life.

Implication on the Original Theory of Change

29. The changes made to the project activities and targets did not affect the Project's underlying ToC. The Project's expected outcomes continued to be relevant, although with enhanced effects when interventions were scaled up.



II. OUTCOME

A. RELEVANCE OF PDOs

Assessment of Relevance of PDOs and Rating

Overall Relevance rating: High

30. The PDO was aligned with the CPS for FY2012-2014 at Appraisal and remained relevant to Pillar 3: “Reducing Vulnerabilities” of the WBG’s Country Partnership Framework (CPF) for FY16-FY20¹⁹ at project closing. Pillar 3 aims to boost resilience to disasters and climate change by strengthening institutions and activities to build resilience; integrating hazard risk information in development planning decisions; improving financial response capacity in the aftermath of disasters; and strengthening capacity for integrated climate change resilience and DRM at the national and municipal level. The Project contributed directly to the institutional building of the national DRM agency, COPECO, and its National Center for Atmosphere, Oceanography and Seismic Studies (*Centro Nacional de Estudios Atmosféricos, Oceanográficos y Sísmicos, CENAOS*) in charge among others of producing and disseminating hydrometeorological/seismologic information. It supported the integration of disaster risk information in national and local territorial planning processes as it engaged local authorities and communities (CODEMs and CODELs) in identifying risks and preparing local plans, including PMOTs, PMGRs, and PEMs. As such, the project followed the CPS emphasis on local planning capacity building, promoting decentralization while also financing high-impact DRM measures. It also improved financial response capacity in the aftermath of disasters by foreseeing and implementing a Contingent Emergency Response Component (CERC), contributing to the CPF’s pillar outcome of “Increased ability of the Government to respond to natural disasters and manage climate change resilience risks”. Finally, the catastrophic floods following the TS Eta and Iota reminded how critical Honduras’ needs to manage floods risk are. This project has demonstrated how even small mitigation measures can achieve a great impact and contribute to preserve life and assets of the country’s most exposed and vulnerable population.

B. ACHIEVEMENT OF PDOs (EFFICACY)

Assessment of Achievement of Each Objective/Outcome

31. The assessment is organized around four key outcomes: (i) National-level DRM capacities strengthened, (ii) Municipal and Community-level DRM capacities strengthened, (iii) Mitigation measures implemented; and (iv) Government capacity to respond promptly and effectively to an eligible emergency improved.

Outcome 1: National-level DRM capacities strengthened

32. The Project was successful in strengthening national institutions on DRM. The specific achievement of this outcome was measured through the PDO-level indicator 1 (Direct project beneficiaries, including a percentage of female beneficiaries) and PDO-level Indicator 2 (Representative sample of direct project beneficiaries, and sampled female beneficiaries, satisfied with COPECO's DRM Project activities). The project surpassed its targets with the project benefiting 1,343,780 people (105% of the targeted 1,285,000 beneficiaries), with 52% being female beneficiaries

¹⁹ The WBG is currently undertaking the formulation of the upcoming CPF for FY22-FY26.



(reaching 102% of the project target); and with 96% of sampled beneficiaries satisfied with COPECO's DRM activities (achieving 113% of the target), with 93% satisfaction from the female sample (achieving 109% of the target).

33. The achievement of this outcome can be further measured by the following results, some of which are not captured in the results framework. Institutional strengthening of the DRM agencies, including COPECO, the CENAOS and the General Directorate of Water Resources (DGRH-MiAmbiente) has resulted in a marked improvement in the forecasting and early warning information to the communities. The application of advanced technological equipment and the capacity built to use it has improved the Government's ability to communicate risk, as well as to make decisions using adequate resolution data and information – critical for municipal and territorial planning. The incorporation of DRM in territorial planning has helped support the reduction of vulnerability in municipalities, which was achieved through the strengthening of DGOT's capacity and improved coordination with the National Territorial Information System (*Sistema Nacional de Información Territorial, SINIT*), the Territorial Planning Norms Registry (*Registro Nacional de Normativas de Ordenamiento Territorial, RENOT*), the National Property Administration System (*Sistema Nacional de Administración de la Propiedad, SINAP*), and the Unified Registry System (*Sistema Unificado de Registro, SURE*).
34. As concluded by the impact evaluation, national-level DRM capacities were strengthened through several actions that included methodology development, and the strengthening of CENAOS and hazard monitoring. These mark a key step forward in DRM. A standard methodology for municipal development and territorial planning with a risk management approach was developed and disseminated. It constituted a starting point from which the institutions could advance jointly in developing planning instruments and ensure risk-informed decisions. The strengthening of CENAOS and the forty-two (42) hazard monitoring stations collecting and transmitting data established through the project had a high impact in building the country's capacities in hazard knowledge and early warning systems.

Outcome 2: Municipal and Community-level DRM capacities strengthened

35. The Project was successful in building municipal and community capacity in DRM during implementation. This outcome was measured by the PDO-level Indicator 3 (Participating municipalities that adopted DRM Plans (PMGRs) and Emergency Plans (PEMs), based on the Project's participatory methodology and Core PDO-level Indicator 4 (Cities with improved livability, sustainability, and/or management). The project achieved its targets with 18 municipalities adopting PMGRs and PEMs (reaching 100% of the target), and 38 cities have improved livability, sustainability, and/or management because of the Project (surpassing the target at 190%).
36. The participatory methodology, which engaged local authorities and communities in identifying risks and preparing local plans, including PMGRs and PEMs, had the following positive outcomes: community understanding of risk and level of preparedness has been considerably improved²⁰; DRM has been institutionalized into the planning activities of the decentralized institutions, with 18 municipalities adopting PMGRs and PEMs; and Units such as Cadaster, Investment, Environment, and Municipal Risk Management trained in territorial planning – and as a result, the use of PMGRs and PEMs increased the number of regulations issued by municipalities on land use and DRM; and national, municipal, and local level coordination and information exchange had been made more effective through the CODEMs and CODELs. The support provided under this component contributed to the GoH requiring all municipalities, as of 2020, through the General Budget Law, to elaborate local emergency plans to reduce and respond to climate risk, in order to access national resources. This reform was retained as one of the Prior Actions under the first Cat DDO.

²⁰ In interviews captured in the 2020 Project Evaluation (*Evaluación Final General Cualitativa del PGRD – COPECO*), community members in the most vulnerable areas of El Negrito reported that as a result of the Project they had a better understanding of natural hazards, as well as the actions they need to follow, and the roles of the institutional actors supporting them, in case of an emergency.



37. The project also supported the organization and restructuring of 20 CODEMs in municipalities of the Sula Valley and the organization of 205 CODELs that were equipped and received training, for a total of 225 Emergency Committees functioning effectively, surpassing the target of 100 (225%). The active participation of women in management positions reached 42% surpassing the target of 40%. Both CODEMs and CODELs are key organizational units that positively impact community resilience and response capacity. The Project provided capacity-building workshops to the CODELs on climate change, gender mainstreaming in shelter management, Community Based Early Warning Systems (CBEWS), DRM, drills, operation of seismographs, accelerographs, and hydrometeorological stations. With these activities, the Project reached 34,448 (surpassing the target of 14,094) participants, from which 14,692 (surpassing the target of 6,423) were women and 1,929 (surpassing the target of 1,000) were Indigenous Peoples and Afro-Honduran communities. The project also trained municipal technicians, who after each training were assessed about its level of satisfaction (training effectiveness, trainer, topic, methodology, and the organization of the event), in which 96% of the sampled technical staff rated the training received under the Project as Satisfactory (surpassing the target of 85%). Additionally, a geoportal was created for public access to information of all the information prepared during the implementation of the project in terms of characterization, plans, elevation models, and explanatory material.

Outcome 3: Mitigation measures implemented and functioning

38. The Project was successful in building COPECO's capacity to identify, design, and implement flood risk reduction measures in targeted municipalities during project implementation. This outcome was measured by PDO-Level Indicator 5 (A percentage of a representative sample of mitigation measures financed by the Project evaluated independently as technically, economically, and environmentally satisfactory). The project achieved its target with 100% of the mitigation works assessed independently as technically, economically, and environmentally as satisfactory (surpassing the target of at least 90% of a representative sample evaluated).
39. Reported to be the most successful component of the Project in the perception surveys of PGRD, the risk reduction mitigation measures effectively contributed to reducing the vulnerability of the communities to disaster risks in the targeted municipalities. According to interviews conducted with beneficiaries, community members who historically had suffered from flood damage now felt a "sense of security" and protection of their homes because of the mitigation works. This was corroborated by the impact evaluation, and the perception surveys²¹ where beneficiaries were asked to qualify their degree of satisfaction as a result of the mitigation works and training carried out by the PGRD - 97% of a representative sample of direct project beneficiaries reported satisfaction with COPECO's DRM project activities and 97% of sampled female beneficiaries were satisfied with COPECO's DRM project activities.
40. Beyond the achievement of the related indicator, according to the final project report, there is also evidence (qualitative only, because there was no risk analysis developed) of the magnitude of the avoided losses after the interventions: "During and after Eta and Iota tropical storms, the works built by the Project met the objective of reducing vulnerability in the beneficiary communities; bridges such as those in the sector of El Sauce, Naco, Buenos Aires, and Toloa, withstood the flood, allowing the immediate rehabilitation of the communication routes after the storms, which facilitated the rescue and support work of the relief and contingency corps." The technicians of the municipalities of Quimistán, Pimienta, and Santa Cruz de Yojoa said that "the works contributed to reducing the damage to the surrounding houses and that the canalizations of El Sauce in Colonia Los Ángeles and the community El Negrito, prevented these sectors from being flooded as usually in those areas". The beneficiaries and municipal representatives commented: "The structural mitigation measures that the project built were not affected by Eta and Iota, and most importantly, the measures met the objective of reducing vulnerability in the beneficiary and surrounding communities of the sectors where the storms passed and prevented these sectors from flooding, as was

²¹ Community Surveys and Quantitative Evaluation as part of the Final Evaluation, 2020.



traditional in those communities.²² Also, the Project Impact Evaluation mentions perception results related to estimated avoided losses caused by other disasters.²³

41. It is estimated that 283,793 people benefitted directly and an estimated 489,659 people indirectly (See Annex 6) from the forty (Target: 40) structural mitigation measures implemented, with temporary employment generated for 4,571 people²⁴.
42. Fifty-five (surpassing the target of twenty) nonstructural mitigation measures supported improved capacity for DRM at the municipal and community level, with 8,038²⁵ people participating in the workshops that focused on building understanding and knowledge on DRM, climate change, and environmental sustainability.
43. Additionally, to enhance Project impact among the most vulnerable, nonstructural risk reduction measures, such as the introduction of CBEWS, were piloted in the Indigenous Peoples and Afro-Honduran Communities in the Project Area. COPECO established dialogue with the Confederation of Autochthonous Peoples of Honduras (CONPAH), held several workshops with the communities, and, based on a consultative process, implemented nonstructural interventions in the Tolupan and Garífuna communities based on the 2020 Indigenous Peoples Plans (IPP). In 2020, the hazard database of the Indigenous Peoples territory of Garífuna and Tolupan was added to the COPECO geoportal as part of the Natural Hazard Atlas developed for Indigenous Peoples and Afro-Honduran communities. In addition, 13 Atlases of natural hazards in the Indigenous Peoples Communities of the Sula Valley (<https://www.pgrd-copeco.gob.hn/atlas-de-amenazas-naturales-en-pueblos-autoctonos-region-01-valle-de-sula/>) were designed and shared with the Tolupan and Garífuna communities, each comprising of nine maps with specific information for each community, including graphic-numerical databases of basic cartography, physiography and natural resources, social aspects, vulnerability, and risks. Two animated videos were produced and disclosed to the population as educational tools on the Atlases' use and management. These activities helped improve the understanding of risk in the Indigenous People's communities while also providing COPECO with an understanding of the needs and risks these communities face. Based on interviews conducted for this ICR, these activities were highly beneficial to the Indigenous Peoples, with evidence of increased preparedness following Tropical Cyclones Eta and Iota.²⁶

Outcome 4: Government capacity to respond promptly and effectively to an eligible emergency improved

44. This Project outcome was primarily measured by PDO-Level Indicator 6 (Time taken to disburse funds requested by the Government for an eligible emergency). Nevertheless, the government's capacity to respond to emergencies was also improved through the institutional strengthening activities of the Project, shown in Component 2 (See the dotted line in the Theory of Change). In the project impact evaluation and the surveys undertaken as part of this ICR, respondents confirmed that PGRD had improved the response capacity of COPECO at the municipal and local levels.
45. Considering the country's vulnerability to disasters, the GoH requested under the original Credit an allocation for the CERC of US\$ 10.0 million. During project implementation: a) the initial CERC allocation was reduced to zero by (i) canceling in April 2014 US\$ 4.0 million, and (ii) reallocating the remaining amount to other project activities in the April 2019 project restructuring; b) in May 2020, the GoH requested to activate the CERC using US\$ 0.53 million of project savings for the COVID-19 response (approved by the Bank on June 2, 2020); and c) on May 3, 2021, the GoH

²² 2013-2021 Project Final Report (August 2021), page 46. See Figures 1 - 3, Annex 5, ICR.

²³ Project Impact Evaluation (August 2020), pages 40-64, 88, 92, 93, 95, 142, 145, 147, 149, 150-151, 154, 156-161; and women, indigenous/afro-descendants, pages 69-70, 75-76.

²⁴ PGRD Final Report, page 37 (*Informe Final PGRD Periodo: 2013 -2021, COPECO*).

²⁵ PGRD Final Report, page 47 (*Informe Final PGRD Periodo: 2013 -2021, COPECO*).

²⁶ See Annex 8: Interview with Project Beneficiaries: "The Project was very helpful, we learned about risk mitigation, and when ETA and IOTA hit Honduras, there was no loss of life in our community, alerts were issued to the population, due to the capacity building given to us by the project, and we alerted other neighboring communities" (*El Proyecto fue de mucha ayuda, aprendimos sobre la mitigación de riesgos, y cuando vino ETA e IOTA, no hubo pérdidas de vidas en nuestra comunidad, se emitieron alertas a la población, debido a lo enseñado por el proyecto, asimismo, también alertamos a otras comunidades vecinas*).



requested again the activation of the CERC to fund eligible activities related to the emergency responses to the Tropical Cyclones Eta and Iota as well as to modify the EAP to the COVID-19 emergency response, which the WB approved on May 11, 2021, accepting the revised EAP for the COVID-19 emergency response for an amount of US\$ 100,108, and to support the GoH response to the Tropical Cyclones Eta and Iota for an amount of US\$ 432,929. Consequently, the withdrawal condition for Category 2 was deemed lifted and to spend up to an amount of US\$ 533,124. In both cases of CERC activation, it took three weeks to access the funds, which was quicker than the four-week target. Nevertheless, while both activations of the CERC were diligently done, the actual delivery of the activities took substantial time, all the more in the context of an emergency (see more details in lessons learned).

Justification of Overall Efficacy Rating

46. The Project is rated **High** in terms of its **efficacy**, having met six (out of six) PDO-level indicators' targets, and fifteen (out of fifteen) Intermediate indicators' targets have either been achieved or exceeded.
47. Beyond the achievements of all the indicators, the passage of the tropical storms Eta and Iota in November 2020 allowed to measure in real terms the improvement in the country's disaster management capacities in particular for extreme events. After Eta and Iota, a much lower number of fatalities (99 in Honduras) were observed than in the case of Hurricane Mitch (about 5,600 in Honduras). While the 1998 hurricane and the 2020 storms are different hydrometeorological events in nature, they also have hydrological similarities as water level measurements on the ground suggested and the magnitude of the emergencies is also very much comparable. The strengthening of surveillance and early warning systems, to which the PGRD significantly contributed, can be considered as one of the key elements that have safeguarded the lives of the population. The planning and support of COPECO at local level were essential for a significantly improved response during the 2020 hurricane season. Finally, the forty structural mitigation measures reportedly avoided significant losses within the beneficiary communities. This life-saving overall improvement in the country's emergency preparedness and response can certainly be partly attributed to the PGRD interventions.
48. It should be noted that in 2019 (before the third project restructuring that modified the results framework), only three indicators had not met the targets established at Appraisal. In addition, the indicator targets were increased to reflect the extension of the project. In 2020, before the fifth project restructuring of December, the only indicator that had not been met was [3.1] (progress: 37 works, out of 40). Despite the achievements of most indicators as of early 2020, the ISR ratings were not upgraded before the 2021 (last) ISR. An upgrade to S was considered in 2020 but in agreement with the CMU, it was not retained owing to the country's situation dealing with the COVID pandemic and the ensuing budgetary constraints. Also, the indicator that provided the greatest impact to the project and the country had not been achieved yet (structural mitigation measures).



C. EFFICIENCY

Assessment of Efficiency and Rating: Substantial

49. **Economic Analysis.** A standard ex-post economic analysis was conducted for the ICR (Annex 4). The analysis was based on actual project outputs, project costs, and estimates of the likely impact of the forty (40) structural mitigation measures built. The analysis shows that the Project is profitable with an economic Net Present Value (NPV) of US\$ 3.4 million and an Internal Rate of Return (IRR) of 21 percent. The economic benefits of the Project were US\$19.3 million, with a Benefit/Cost (B/C) ratio of 1.21. It can thus be concluded that the Project's economic benefits exceed the associated costs by US\$8.5 million, NPV by US\$1.5 million, and IRR by 8.11%, compared with the ex-ante economic analysis.
50. The ex-post economic analysis was developed under the same methodology used in the ex-ante assessment, based on the following criteria: 1) The same opportunity cost of capital of 10%, and 2) All costs and benefits estimates were projected to 25 years, which was the return period used for the structural mitigation works²⁷.
51. The forty structural mitigation works built were rated "high" due to a Benefit/Cost ratio greater than 1, a positive NPV, and an IRR above the applied discount rate (10%). See Annex 4, Table 2 for details on the results of the Economic indicators for each structural mitigation measure.
52. **Financial Evaluation.** During implementation, several financial changes were made that did not affect the Project objectives, such as: a) The first Project Restructuring (2014) canceled US\$ 4 million of the IDA Credit from the CERC component (Balance: US\$ 26 million), b) Due to the Mid-Term Review (2017), a third Project Restructuring (2019) resulted in several significant changes, including a reallocation of funds from the CERC Component to all other Components, as well as a change in component costs, and c) On June 2, 2020, a first CERC activation was requested and approved by the Association to support the Recipient's response to the COVID-19 pandemic for an amount of US\$ 533,124.00²⁸.
53. As of July 31, 2021, the Project had a good financial performance, which presents a financial execution of US\$ 23,715,204.00, or 99% regarding the disbursed funds (Total disbursed: US\$ 23,926,796.00²⁹), and 91% of the total loan of US\$ 26 million. As of July 31, 2021, the remaining balance was US\$ 211,592.00 (non-disbursed funds), distributed as follows: US\$ 114,654.00 (Component 5) and US\$ 96,938.00 (Special Account, Components 1 to 4).
54. **Sensitivity analysis.** The economic indicators were evaluated under two scenarios of assumptions about costs and benefits. The first scenario considered a reduction of the estimated benefits by 20%. The second, increased the costs by 20%. The results showed that the Project is more susceptible to benefit decreases than increased costs (see Table 10, Annex 4).

²⁷ See costs and benefits criteria used in the Ex-ante economic analysis, on pages 75 and 76, PAD.

²⁸ The scope of this first CERC was to assess and rehabilitate 8 local health centers. In November 2020, the Eta and Iota Tropical Cyclones heavily affected most of these health centers; therefore, the identified scope of the CERC work became obsolete, which led the GoH to cancel these activities. The GoH letter request (dated May 3, 2021) included a new EAP in response to the Tropical Cyclones Eta and Iota and a revised EAP in response to the COVID-19 pandemic. Cumulatively in both EAPs, the estimate for Bank financing needed was US\$533,037. The amount of US\$533,124 was already reallocated from Category (1) to Category (2) of the disbursement table under the CERC, activated for the COVID-19 response. This amount was also disbursed to the Recipient and was available at the PGDR's Designated Account when the new request of CERC activation was submitted. On May 11, 2021 the Bank approved the activation of the CERC to assign uncommitted funds under Category 2 in the withdrawal table outlined in Section IV.A of Schedule 2 to the Financing Agreement to finance immediate recovery activities to address the compound impacts of tropical cyclones Eta and Iota (US\$432,929) and redirect the COVID19 pandemic response (US\$100,108).

²⁹ As of 12/18/2021, the Client Connection system showed that US\$ 23,926,796 had been disbursed, which is the same amount that is in this ICR. However, the ICR data sheet presents other information (\$ 23,752,620). Client Connection is the World Bank's official system for project disbursements.



Justification of Overall Efficiency Rating

55. The **Project is rated Substantial in terms of its efficiency** based on the highly positive economic and financial results and assessment of key elements for the sustainability of project interventions. Despite the cancellation of US\$4 Million from the CERC funds and the delays that extended the project closing (mentioned in Section I.B.) to approximately 26 months (original closing date: 04/30/2019, actual closing date: 06/30/2021), the project efficiency is rated as Substantial, based on the ex post economic and financial analysis results, which reflect that the investments of the Project were executed almost in their entirety (91% as of July 31, 2021) and 99% disbursed. It can be concluded that the delays referred to did not affect the achievement of the PDO-Level indicators and Intermediate Results Indicators (achieving all), and targets were achieved with less resources. See Annex 4 for further details on the Efficiency Assessment results.

D. JUSTIFICATION OF OVERALL OUTCOME RATING

56. The Project's overall outcome is rated as **Highly Satisfactory** due to the **high relevance** of its PDO at Project Appraisal and Closing, the Project's **high efficacy** in achieving the intended outcomes with only minor shortcomings, and the **substantial efficiency** with which the inputs and resources have translated into results.
57. It should be noted that the PDO and IP ratings given during the life of the project were established based on the likelihood of the achievement of the PDO (by the closing date and consistent with progress on results and implementation) and based on the progress status (project components and activities, consistent and evidence-based), respectively, established in the Investment Project Financing Implementation Support to Project Completion guidelines. And the ratings given to this ICR are based on Effectiveness, Efficiency, and Relevance, established in the ICR Guidelines.

E. OTHER OUTCOMES AND IMPACTS

Gender

58. A Gender Strategy was developed for PGRD and had positive outcomes. According to the findings in the 2020 Final Evaluation³⁰ and the results of the two PDO-level Indicators and two Intermediate Indicators focused on gender, the project was able to reach 52% female beneficiaries (target 51%), 93% of sampled female beneficiaries were satisfied with COPECO's DRM project activities (target 85%), 42% of women participated actively in management positions of CODEM and CODELs (target 40%), 97% of sampled direct female beneficiaries rated structural mitigation measures implemented as satisfactory (target 85%) and 14,692 females participated in consultation activities during project implementation was (target 6,423). These findings indicate that significant progress was made in terms of raising awareness of the importance of gender equality and equal participation of men and women in public institutions at the national and municipal levels, and PGRD also contributed to strengthening the leadership roles and opportunities for women. This was achieved through several workshops and training events and PGRD working closely with the Municipal Office for Women (*la Oficina Municipal de la Mujer - OMM*) to promote collaboration and incorporate gender in DRM and sustainable development planning.

³⁰ The Project prepared its final evaluation in 2020, because due to the first extension of the closing date, the project was planned to end on June 30, 2020.



Institutional Strengthening

59. COVID-19 and Eta and Iota emergencies demonstrated the improved coordination capacity of the SINAGER and its member institutions, including COPECO. SINAGER has positioned itself as a more effective system that is responsible for prioritizing emergency response and coordinating inter-institutional actions in the country. Based on feedback from the interviews (August 2021) undertaken for the preparation of this ICR, an important achievement of the Project was the strengthening of the communities' early warning system and CENAOS. In addition, the Secretariats and Decentralized Institutions now incorporate DRM in their planning activities, and at the Local government level, DRM is included in the Municipal Environmental and Risk Management Units where protocols for zoning, territorial planning, resource management, and emergency response have been developed.

Poverty Reduction

60. The project was aligned with the Country Vision for 2010-2038 and the National Plan for 2010-2022, built on the 2003 and 2008 Poverty Reduction Strategy documents. The Project was also founded on the strong commitment and broad consensus in the country regarding the importance of DRM for inclusive growth and poverty reduction. Government efforts to reduce poverty and sustain economic growth have been hindered by the country's high vulnerability to disasters, especially hurricanes, tropical storms, and associated impacts such as flooding and landslides. However, based on interviews conducted for this ICR, there is evidence that preparedness following Tropical Cyclones Eta and Iota has increased. Community members who historically had suffered from flood damage said that because of this preparedness and the implementation of mitigation works in their Municipalities, their lives and properties are now protected, with no damages following Tropical Cyclones Eta and Iota. Also, the project provided employment opportunities for communities in municipalities where the mitigation works were implemented: temporary employment was generated for 4,571 people³¹.

Mobilizing Private Sector Financing

61. Neither the project nor the CERC had activities related to the mobilization of financing from the private sector.

Other Unintended Outcomes and Impacts

62. The structural mitigation measures had several other positive impacts for the communities living in the Project area; not only did they reduce the risk of flooding in the municipalities, but they also improved health conditions, facilitated transport, reduced migration, and improved community development (For more details see Annex 5).

III. KEY FACTORS THAT AFFECTED IMPLEMENTATION AND OUTCOME

A. KEY FACTORS DURING PREPARATION

63. The Project was well-designed and built off the success of the previous Bank-funded PMDN project. Several of the successful outcomes of PGRD can be attributed to the continuation and reflection of lessons learned from the PMDN project, including: a participatory methodology that was expected to engage municipalities and the community in territorial planning and DRM; implementing relatively small scale structural measures in at-risk municipalities, which had a big impact on saving lives and protecting property at the community level; and ensuring clear and simple lines of accountability and resource management. COPECO's prior experience implementing PMDN and the Inter-American Development Bank (IDB) Disaster Risk Prevention and Mitigation Project (MITIGAR) ensured adequate financial



management arrangements that met the Bank's minimum fiduciary requirements and ensured readiness for implementation.

64. There were challenges in setting up the Monitoring and Evaluation (M&E) methodological Plan to measure the Project Results Framework Indicators, such as the lack of inclusion of appropriate data collection, inadequate use of M&E information for project management, and limited ability to report in a timely fashion. However, this was rectified following the MTR. Overall, project preparation took five months from concept to Board approval.

B. KEY FACTORS DURING IMPLEMENTATION

65. The Project benefited from the Government of Honduras' strong consensus and commitment on the importance of DRM for reducing vulnerabilities, promoting inclusive growth, and reducing poverty, as well as the long-standing partnership between the country and the Bank on DRM. In addition, COPECO was a strong implementing partner for the Project, having had prior experience in Bank-funded projects.
66. Fiscal constraints in the country affected Project implementation and resulted in delays. In 2014, the project's budget allocation was not registered in the National Integrated System of Financial Administration (SIAFI), resulting in several procurement delays. SEFIN annual allocations to COPECO were subject to "budgetary ceilings" that, together with the requirement that SEFIN had to go before the legislature for project extensions, also caused delays in the execution of the Project. At Project Closing, no budget was assigned to the PIU for the project grace period (July-October 2021), resulting in key staff working unpaid, including the auditing firm. This was rectified by the end of September 2021.
67. Political and social instability in Honduras was another factor that impacted the Project. The 2013 national election resulted in significant institutional restructuring, causing amendments to the Financing Agreement and to the co-execution agreements, such as: a) At the national level, the elimination of SEPLAN impacted the regional integration of DRM in territorial planning and caused initial coordination issues, and b) At the municipal level, changes in government resulted in high staff turnover and additional costs and efforts to maintain the same level of technical expertise. The elevated levels of crime in the country also caused safety concerns that delayed some structural mitigation works.
68. During the MTR, several deficiencies in the Project were identified. From an environmental and social perspective, the Project had not engaged with the Indigenous Peoples and Afro-Descendant communities in the Project Area. This was rectified through consultations, the development of the IPP, implementation of nonstructural measures in the Tolupan and Garífuna communities, as well as the development of the Atlases of natural hazards in the Communities of Indigenous Peoples of the Sula Valley. In addition, technical capacity issues with the consultancy hired to undertake the risk studies caused delays during the project's first two years. Finally, the MTR highlighted the limited participation of the Municipalities in the construction, supervision, and assurance of environmental controls in the structural mitigation measures.
69. The approval for the 2019 Restructuring took around two years. The Ministry of Finance (SEFIN) sent two letters to the Bank on December 5, 2017, and on November 15, 2018, to request to reallocate the unused CERC proceeds to other components to maximize the project's impact, extend the closing date, and modify the Results Framework. The delay between the two requests for restructuring was due to internal GoH's procedural requirements, which

³¹ 2013 -2021 PGRD Final Report (*Informe Final PGRD 2013 -2021, COPECO*).



required a waiver to be obtained from Congress. In February 2018, the GoH responded that this request would take longer than expected due to the country's legal procedure that requires that at least 75% of total Credit funds should be committed, including the CERC. Since the CERC was outside the purview of COPECO, an exception was sought by COPECO in the National Congress to obtain a waiver for extending the project's closing date without the 75 percent rule. Obtaining this exception took nine months, and Congress approved it on November 8, 2018 [Decree 110-2018, gazette Number 34,789]. In the April 2019 project restructuring, the GoH and the Bank reviewed the implementation plan and agreed that all activities under the project could be implemented by June 30, 2020, requiring a 14-month extension of the closing date.

70. In March 2020, the COVID-19 Pandemic weakened Honduras economic growth, and the nationwide curfew caused several delays in the construction of the structural mitigation measures. In November 2020, Tropical Cyclones Eta and Iota impacted Honduras and, in particular, the Sula Valley (the Project area). Over 4.5 million people were affected, 99 people died, and 1 million people were evacuated. The two disasters compounded the country's vulnerability, which was already facing significant setbacks due to the COVID-19 pandemic. Ninety percent of the centers (International Sanitary Offices and Mass Attention Units) identified to support the COVID-19 emergency were flooded, resulting in the second activation of the CERC, which focused on responding to the damages caused by the Tropical Cyclones and revised the EAP for the COVID-19 response.

IV. BANK PERFORMANCE, COMPLIANCE ISSUES, AND RISK TO DEVELOPMENT OUTCOME

A. QUALITY OF MONITORING AND EVALUATION (M&E)

Overall Quality of M&E rating: Substantial

M&E Design

71. The PGRD, through the PIU, was responsible for M&E processes. M&E staff was designated in the PIU to enhance communication with the different focal points, PGRD and COPECO. Co-executing agencies and participating municipalities collaborated with the PIU by providing progress reports and relevant information. The Bank team also supported the PIU M&E team to a) provide timely and accurate information related to the Project's results framework, b) collect, analyze, and report on project performance data (including physical and financial progress); and (c) provide periodic information on intermediate project results and progress toward higher-level outcomes.
72. Regarding the Results Framework (RF), the Project Key Outcomes were aligned with the PDO-Level Indicators, including appropriate and realistic targets; and the links from the Intermediate Results Indicators to these outcomes were measurable. One of the key elements of the RF is the M&E plan for each indicator, which was prepared with Bank support in 2019. The M&E plan was based on a methodology that measured each indicator through Indicator Measurement Fact Sheets (IMFS), which included: Indicator's description, geographic scope, unit of measurement, formula, frequency, responsible for data collection, source of information, means of verification, and data collection instruments. Therefore, from 2019 to 2021, the IMFS was monitored and updated quarterly.
73. The Project's ToC was not designed at Appraisal though it was created ex-post for the purpose of the ICR (See Figure 1, Section I.A.).
74. At appraisal and in the 2019 and 2020 restructurings, the Results indicators were designed according to the SMART (Specific, Measurable, Adequate, Realistic and Targeted) methodology, providing the results chain from activities to outputs, outputs to outcomes, and from outcomes to measure the achievement of the PDO. The Indicators were (i) *specific*, because there was a clear linkage between them and the stated results; (ii) *measurable*, as they were



clear about the measurement of the intended results; (iii) the Indicators were also *adequate* and had sufficient information to assess the intended results; (iv) *realistic*, as the data obtained was at a reasonable cost and with enough frequency of measurement; and (v) the Indicators had a *targeted* population and coverage area defined. Therefore, the indicators provided accurate and reliable evidence about the achievement of a specific result. For more details on the use of the SMART methodology, see Annex 1, Tables 1 and 2.

75. The arrangements for M&E were acceptable to the Bank. Based on the Key Factors during preparation explained in Section III.A., regarding the lack of an M&E methodological plan, the Project M&E was rated *Moderately Satisfactory* from June 2015 to November 2019. In December 2019, it changed to *Satisfactory* due to the progress presented below.

M&E Implementation

76. The M&E team was responsible for all the measurements and reporting of project indicators, monitoring the progress of key targets in the field, and assisting the executing agencies in reporting the needed data and information. The semi-annual progress reports were of adequate quality and submitted on time, according to Schedule 2, Section II.A. of the Financial agreement (not later than forty-five days after the end of each semester covered by such reports).
77. At the MTR and Final Evaluation Report, several external consultants were recruited by the Project to prepare both assessments, including (i) Technical, Economic, and Environmental Evaluation of the structural mitigation measures; (ii) Economic and Financial Analysis (only at closing: ex-post); (iii) Social Audits; (iv) Emergency Drills; (v) Quantity Evaluation Report and Database; and (vi) Consolidated Evaluations' Reports.
78. In 2020, the PIU, with Bank advice, conducted an impact level evaluation to assess the Project's efficacy. This study was carried out by a firm contracted by the Project, conducting a survey directed to 1,100 project beneficiaries (households) and 260 members of CODELs, CODEMs, and co-executing agencies, within the area covered by PGRD. The study assessed whether the analysis, planning, decision-making, and implementation processes of actions aimed to correct vulnerabilities in development processes and if it prevented the effects of a potentially destructive phenomenon from causing damage or severe disruptions to people's lives, livelihoods, and ecosystems territories (including counterfactuals). It also provided valuable information about DRM's short and long-term effects on households' main assets. Moreover, this impact evaluation, plus the technical, economic, and environmental evaluation of the mitigation measures and an additional economic evaluation contracted by the Project, offered key data to develop the ex-post Economic and Financial Analysis and the Impact Evaluation for this ICR (Annexes 4 and 5). From December 2019 to August 2020, the PIU prepared the Government's Project Completion Report with assistance from external consultants, who conducted the following assessments: (i) Project Economic Evaluation; (ii) Technical, Economic and Environmental Evaluation of 35 works (out of 40); (iii) Social Audit; (iv) Emergency Drill; (v) Quantity Evaluation Report; and (vi) Qualitative Evaluation Report (General Evaluation).

M&E Utilization

79. M&E data on performance and results progress were used to inform project management and decision-making. Throughout project implementation, the information provided by the M&E team enabled PGRD, COPECO, and the co-executing agencies to identify bottlenecks that could affect the achievement of project targets. Also, the M&E



reports allowed these agencies to inform about DRM in the municipalities, communities, CODELS, and CODEMs of the project area.

80. Based on the MTR recommendations, the Results Framework was adjusted in the April 2019 project restructuring to reflect the scaled-up activities and increased targets, to enhance M&E implementation and project evaluation, and focus on better data integration under the M&E system (Microsoft Excel database); followed by a structured methodology for indicators' measurement, designed in May 2019, with the support of the Bank M&E Specialists. This methodology was implemented by the PIU from June 2019 until project closing to measure each indicator of the Result Framework and to monitor Project progress quarterly through the Indicator Measurement Fact Sheets, an Action Plan, and an M&E Plan. In the June 2020 project restructuring, the Results Framework was also revised to add one intermediate indicator to follow up the activation of the CERC due to the COVID-19 crisis.

Justification of Overall Rating of Quality of M&E

81. The overall quality of the M&E is rated **Substantial**. The M&E system was designed with some delays and implemented well since 2019. The quality of reporting of the M&E system continued to improve during project implementation. M&E staffing was qualified and collaborated with the planning team and the focal points. Throughout the Project's life, the Bank M&E specialists advised the PIU M&E team frequently, participating in implementation support missions and revising M&E methodologies, project indicators, consultant terms of reference, Annual Operations Plans, as well as the planning and implementation of the Project baseline, MTR, and final evaluation. This specialized support contributed to making the M&E inputs more consistent and reliable.

B. ENVIRONMENTAL, SOCIAL, AND FIDUCIARY COMPLIANCE

82. **Environmental safeguards:** The Project was classified as category B and triggered the following environmental safeguard policies: Environmental Assessment (OP 4.01), Natural Habitats (OP 4.04), Physical Cultural Resources (OP 4.11), and Forests (OP 4.36). An Environmental and Social Management Framework (ESMF) was finalized through consultations with a wide range of stakeholders that took place on October 5, 2012. In accordance with the Bank's Information Disclosure Policy (BP 17.50), the ESMF was disclosed in the Borrower's and the Bank's websites on October 17, 2012. The structural mitigation measures or works that were carried out before 2019 complied with the provisions of the applicable national legislation. However, their reports did not include a description of compliance with the ESMF developed for the Project, and the performance of the reported activities was not documented. Beginning with the MTR in 2019, following an update of the ESMF and closer supervision of the contractors, the environmental performance of the works gradually improved, and the supervision and compliance with the ESMF requirements were documented more efficiently. The Project's ESMF was updated during the MTR to include environmental and occupational safety aspects not originally considered and was redisclosed in January 2020. The 13 works carried out in 2019 and 2020 presented adequately documented reports on the supervision carried out and compliance with the ESMF and applicable national legislation, for which their performance was rated as satisfactory. For all works, maintenance plans were delivered by the contractors to COPECO, and the corresponding municipalities were trained about these plans through workshops, providing assurance about the sustainability of the works and their proper long-term functioning.
83. **Social Safeguards.** The Project triggered social safeguards for Indigenous Peoples (OP/BP 4.10) and Involuntary Resettlement (OP/BP 4.12). During the Project's MTR, it was agreed that a social management system would be adopted to improve community participation and ownership of mitigation works, and a more proactive approach towards the Indigenous Peoples and Afro-Descendant communities in the Project Area was recommended. It was also recommended that the Resettlement Policy Framework be reviewed to ensure that the impacts,



compensation, and documentation processes were aligned with the Bank's Operational Policy 4.12 and that training be provided to municipalities on international standards and tools for resettlement.

84. COPECO adopted the social management system and effectively implemented it with important improvements in community participation, ownership, and management of grievances. It also established dialogue with the national indigenous community's organization (CONPAH) and carried out workshops with Indigenous Tolupan and Afro-Descendant Garifuna communities to identify the risks and systematize traditional practices and knowledge in risk prevention and response. The Project implemented nonstructural mitigation measures in the Tolupan and Garifuna communities following its 2019 restructuring.
85. Due to the delays in implementing those activities, OP/BP 4.10 and OP/BP 4.12 were rated Moderately Satisfactory (MS) between June 2017 and October 2018. Given this MS rating, the overall safeguards rating was also MS during the same period. However, these ratings were upgraded to Satisfactory in October 2018 (*until project closure*) due to evidence of progress.
86. In addition to the regular project activities, the CERC was activated to finance expenditures incurred by the Government for equipment and goods used for the COVID-19 health emergency response (June 2020, and its EAP was revised in May 2021) and then Tropical Cyclones Eta and Iota (May 2021). The CERC did not trigger additional safeguards from those already applicable. In both cases, for the activation of the CERC, the preliminary environmental and social evaluation (FEASP) of the activities proposed in the Emergency Assistance Plans (EAPs) was carried out, specifying necessary environmental control measures and safety standards for the activities outlined in the EAPs, but no information was provided regarding compliance with these measures.
87. **Financial Management (FM).** FM performance was rated *Satisfactory* throughout most of the project Implementation. However, on June 15, 2021, the FM performance was rated as Moderated Satisfactory due to the lack of confirmation of client funds to cover the costs of the grace period, putting the closing project activities at risk. The Project's FM system was implemented, maintained, and operated satisfactorily, allowing for adequate financial monitoring and compliance with overall FM arrangements. The Project's bi-annual interim unaudited financial reports (IFR) were submitted to the Bank with only minor delays; however, they were acceptable and allowed for adequate financial monitoring. Audit reports were submitted in a timely fashion to the Bank, included unmodified (clean) opinions, and were accepted by the Bank.
88. **Procurement.** Procurement was rated *Satisfactory* throughout project Implementation, except in December 2020, it was downgraded to *Moderately Satisfactory* following a procurement post review that indicated noncompliance with the principles of the old procurement guidelines, which was eventually cleared. Procurement processes were implemented based on the Annual Operations Plans (POA) and the procurement plans, which were reviewed by the Bank prior to its implementation each year. The procurement plan was updated frequently, keeping the supporting information updated in the Systematic Tracking of Exchanges in Procurement System (STEP). Regular supervision missions supported the implementation and monitoring, maintaining a satisfactory rating throughout largely due to the close working relationship between the Bank and the PIU and the PIU procurement capacity.



C. BANK PERFORMANCE

89. The four Bank Task Team Leaders (TTLs) for the Project demonstrated a sound knowledge of the country's context, sector issues and developed a good relationship with the PIU and co-executing agencies. Having part of the Bank team in the country, along with close collaboration with the Country Office, also helped in the delivery of technical and operational advice, as well as in the close follow-up of emerging issues and risks.

Quality at Entry

90. The Bank team was well-equipped to advise during project preparation. Having the same TTL involved in the previous PMDN project meant that the Bank was able to deliver a Project that was strategically relevant and built off prior experience and successes. The task team also ensured that good global practices and international standards on DRM and territorial planning were applied to the Honduran context, ensuring the country could benefit from the latest technological advances and innovations on DRM. The Bank team identified COPECO as the PIU based on the successful implementation of previous projects. Among other aspects, it was necessary to balance institutional deployment with the need for progressively gaining legitimacy with the population to develop tailored activities for specific groups such as women and Indigenous Peoples, who both benefitted from a specific focus in the Project Appraisal Document. Ensuring the application of lessons learned in project design also contributed to the Project's quality at entry. Foreseen M&E arrangements followed standard practice. Risk assessment rightfully identified Governance as the main risk since this mainly affected the project and caused implementation delays.

Quality of Supervision

91. In general, Implementation Support Missions – with a total of 50 missions and 16 videoconferences – were timely, appropriately resourced, and solution-oriented. During the COVID-19 pandemic, the Bank provided remote supervision; therefore, the project was not affected significantly since from March 2020 to June 2021, the project was in its final stages. The last in-country mission took place in January 2020. Implementation support continued remotely through virtual meetings with counterparts and provision of data. Regardless of the pandemic, Government ICR was provided to the team in advance, allowing for the gathering of evidence needed for the closing of the Project.
92. During implementation, the Bank focused on delivering specialized technical and operational advice support to the PIU to ensure adequate management of environmental and social, and fiduciary risks. The team demonstrated candor in reporting performance issues by downgrading the project to MU for about a year time. Effective decisions and agreements resulted from the MTR, and critical issues affecting implementation were adequately handled, including engaging communities with a gender approach and consistent with Indigenous Peoples and Afro-Descendant communities' culture and priorities; holding workshops to ensure an adequate understanding of guidelines and procedures for the CERC; providing technical advice on how to measure the economic, social, and environmental impacts of the Project and address the challenge of gathering Baseline, MTR, and Final Evaluation data for M&E; and providing technical expertise to strengthen risk management capacities at the municipal and community levels. The team demonstrated an adaptive and proactive approach to challenges.
93. Three Management Letters (December 18, 2019, March 10, 2020, and October 30, 2020) were sent to the GoH, and several meetings were held with SEFIN and COPECO to address the lack of government budget allocation for the PIU in the grace period following the closing of the Project. The task team continued to follow up on the issue and ensured that the Project closed satisfactorily and that the Project closing staff were paid and able to deliver the final reports and cover the costs of the audits.



Justification of Overall Rating of Bank Performance

94. Bank performance is rated **Satisfactory** considering there were only minor shortcomings in the quality of supervision, that the Bank provided technical advice and continuous support during project preparation and implementation, and effectively and proactively followed up on emerging issues.

D. RISK TO DEVELOPMENT OUTCOME

95. The Government of Honduras has a clear vision and demonstrated commitment to DRM. Project outcomes are likely to be sustained given the institutional commitment and increased capacity, as well as the close inter-institutional collaboration and coordination fostered through the Project.
96. However, one risk that has been identified is ensuring the sustainability of the structural mitigation measures, given the lack of municipal budget and evidence of maintenance issues. Therefore, remaining issues include: (i) agreeing on the long-term role of municipalities in DRM to ensure the maintenance of structural mitigation measures, for which investments have been made within the framework of this project; and (ii) COPECO needs adequate governmental resources to continue strengthening Honduras capacity for integrated disaster risk management at the municipal and national following up on the DRM activities implemented by the project.

E. LESSONS AND RECOMMENDATIONS

97. **One of the key factors of success for PGRD was that it was a continuation and strengthening of the previous DRM Project (PMDN) outcomes and benefited from a strong commitment to DRM by the Government of Honduras.** The Project was built off the approach of engaging at the municipal and community level and applying a participatory approach in the design of the Municipal DRM Plans (PMGRs) and the Municipal Emergency Plans (PEMs), as well as the structural and nonstructural mitigation measures. This coupled with the strong commitment to DRM by the Government of Honduras and a qualified PIU staff; all contributed to the success of PGRD. Strong institutional capacity - including low staff turnover and responsiveness to the population's needs - and transparency are critical factors for successful projects. These qualities were evident with PGRD-COPECO but could be strengthened at the municipal level. Permanent staff and personnel at the municipal level would help ensure continuity and more efficiency.
98. **Integrating DRM in territorial planning has supported a risk-informed approach in development planning and contributed to the culture of prevention in Honduras.** The development of a methodology for territorial planning with a risk management approach marks a key step forward in DRM. A standard methodology for territorial planning is a starting point from which other institutions can jointly advance in the construction of planning instruments. In particular, the PMGRs and PEMs are important instruments that provide a framework for building resilience at the local level. However, territorial planning that incorporates DRM has demanding requirements for effective implementation. In addition, PMGRs and PEMs are "living" instruments that must be constantly updated. Investments in human capital are needed to keep the DRM system operational, including continued training opportunities and hiring and retainment of technical experts, such as meteorologists, hydrologists, and geologists.
99. **Honduras is a country that faces budget liquidity issues, and this was reflected in the fiscal constraints that PGRD faced during Project implementation.** Additionally, the country suffers from high political and social turmoil, which can also cause delays and financial access issues. These risks should be considered and built into the design of future projects. It is also recommended that future CERCs always have a zero allocation of funding to avoid



requesting a waiver in Congress for a restructuring (to reallocate funds to other Project Components if necessary), as this caused several delays in this Project.

100. **The participatory methodology of the Project design for risk and vulnerability analysis as well as decision making facilitated the proactive inclusion of indigenous and Afro-Honduran peoples.** Including communities in the design of PMGRs and PEMs, as well as mitigation works supervision and maintenance, had a positive impact in terms of community empowerment and buy-in. Community participation and citizen engagement were the foundation for inclusive DRM & Gender Equality (<https://www.gfdr.org/en/inclusive-drm>), and it is expected that these activities will have a short- and long-term impact, if sustained, in building local DRM capacity. The engagement and consultation with Indigenous Peoples and Afro-Honduran population in the Project Areas was an impactful pilot approach for the Project. It provided COPECO with a better understanding of the needs and risks these communities face while also building local preparedness for the most vulnerable communities.
101. **The structural mitigation works demonstrated a high impact on reducing household risks and improving the lives and livelihoods of communities.** Structural mitigation works, such as bridges and stormwater canals, produce a highly positive impact on the wellbeing of communities. Investing in these works can have benefits beyond DRM – including supporting rural development, improving urban infrastructure, providing employment, and even transportation impacts. The foundation, organization, and training of the CODEMs and CODELs linked to the implementation of structural mitigation works, had a high impact on DRM response capacity and the empowerment of communities, which was evidenced in the interviews conducted in this ICR, where CODELs leaders indicated that they are contributing to the sustainability of the structural mitigation measures implemented by the Project in their communities, giving maintenance to them, due to the lack of it from the Municipalities. The sustainability of the structural mitigation measures will depend on maintenance, which in turn depends on the willingness of the communities and the budget allocation to Municipalities to carry it out regularly. Without adequate operating budgets for municipal maintenance of these works, as well as continued engagement and support to the CODEMs and CODELs, the sustainability of these works is in jeopardy.
102. **The CERC implementation proved to have limited effectiveness as an emergency response instrument.** The CERC was activated twice during project implementation, once for the COVID-19 pandemic (June 2020) and the second time to respond to Tropical Cyclones Eta and Iota (May 2021), for activities of limited emergency goods procurement amounting to about half a million USD. In both cases, it took three weeks to access the funds, which was quicker than the four-week target. However, prior to this, it took significant time to process the necessary documents to request the activation of the CERC formally. For the first CERC, the preparation and review of these documents took around three months and the second CERC five months from both parties (Bank and GoH). This implies that the GoH responded to both emergencies in 5 to 7 months, respectively, from the declaration of the state of emergency, activation time, disbursement until access and implementation of the funds. Therefore, more flexibility in the preparation and approval of these documents to the extent permitted by Bank policies.
103. **One of the major challenges of promoting disaster mitigation and prevention is demonstrating that its potential benefits far exceed its costs in terms of saved lives and property.** Based on interviews conducted for this ICR (See Annex 8), evidence of preparedness following Tropical Cyclones Eta and Iota has increased. Community members who historically had suffered from flood damages said that because of the capacity building and structural mitigation measures implemented by this Project, there was no loss of lives, properties, and assets in their communities.



ANNEX 1. RESULTS FRAMEWORK AND KEY OUTPUTS

A. RESULTS INDICATORS

A.1 PDO Indicators

Objective/Outcome: Strengthen capacity for integrated disaster riskmanagement at the municipal and national level.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Direct project beneficiaries	Number	0.00 30-Nov-2012	850000.00 13-Dec-2012	1,285,000.00 08-Apr-2019	1,343,780.00 30-Jun-2021
Female beneficiaries	Percentage	0.00	51.00	51.00	52.00

Comments (achievements against targets):

The project benefited 1,343,780 people (105% of the targeted 1,285,000 beneficiaries), with 52% being female beneficiaries (reaching 102% of the project target); benefiting 493,780 more people, compared to the original target (850,000).

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
At least 85% of a	Percentage	0.00	70.00	85.00	96.00



representative sample of direct Project beneficiaries are satisfied with COPECO's DRM Project activities (third level on a four-level scale)		30-Nov-2012	13-Dec-2012	08-Apr-2019	30-Jun-2021
At least 85% of sampled female beneficiaries are satisfied with COPECO's DRM Project activities	Percentage	0.00 30-Nov-2012	70.00 13-Dec-2012	85.00 08-Apr-2019	93.00 30-Jun-2021
Comments (achievements against targets): 96% of sampled beneficiaries reportedly satisfied with COPECO's DRM activities (achieving 113% of the target), with 93% satisfaction from the female sample (achieving 109% of the target).					
Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
At least 18 participating municipalities have adopted DRM Plans (PMGRs), and Emergency Plans (PEMs) based on the Project's participatory methodology	Number	0.00 30-Nov-2012	16.00 13-Dec-2012	18.00 08-Apr-2019	18.00 30-Jun-2021
Comments (achievements against targets): The project achieved its targets with 18 municipalities adopting PMGRs and PEMs (reaching 100% of the target).					



Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Cities with improved livability, sustainability, and/or management	Number	0.00 01-Mar-2019	20.00 08-Apr-2019		38.00 30-Jun-2021

Comments (achievements against targets):

The project achieved its targets with 38 cities that have improved livability, sustainability, and/or management (surpassing the target at 190%).

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
At least 90% of a representative sample of mitigation works is assessed independently as technically, economically and environmentally satisfactory or above.	Percentage	0.00 30-Nov-2012	85.00 13-Dec-2012	90.00 08-Apr-2019	100.00 30-Jun-2021

Comments (achievements against targets):

The project surpassed its target with 100% of the mitigation works evaluated as satisfactory (111% achieved).

Objective/Outcome: Improve capacity to respond promptly and effectively to an eligible emergency.



Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Time taken to disburse funds requested by Government for an eligible emergency	Weeks	0.00 30-Nov-2012	4.00 13-Dec-2012		3.00 30-Jun-2021
Comments (achievements against targets): The CERC was activated twice during project implementation. In both cases, it took three weeks to access the funds (four-week target).					

A.2 Intermediate Results Indicators

Component: Strengthening of National-level DRM Capacities

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
1.1 Standard methodology for municipal development and territorial planning developed and disseminated	Number	0.00 30-Nov-2012	1.00 13-Dec-2012		1.00 30-Jun-2021
Comments (achievements against targets): The status of the end target of this Indicator is 100% achieved.					

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised	Actual Achieved at
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				Target	Completion
1.2 Number of annual climate and meteorological reports / bulletins issued by the COPECO - National Center for Atmospheric, Oceanographic and Seismic Studies (CENAOS)	Number	0.00 01-Mar-2019	40.00 08-Apr-2019		130.00 30-Jun-2021

Comments (achievements against targets):

The status of the end target of this Indicator is 325% achieved.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
1.3 Number of hazard-monitoring stations collecting and transmitting data	Number	0.00 30-Nov-2012	100.00 13-Dec-2012	42.00 08-Apr-2019	42.00 30-Jun-2021

Comments (achievements against targets):

The status of the end target of this Indicator is 100% achieved. The unit of measure of the original target was in percentage (100%).

Component: Strengthening of Municipal and Community-level DRM Capacities

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised	Actual Achieved at
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				Target	Completion
2.1 CODEMs and CODELs established and functioning effectively	Number	0.00 30-Nov-2012	60.00 13-Dec-2012	100.00 08-Apr-2019	225.00 30-Jun-2021
2.1(a) Women participating actively in management positions of CODEMs and CODELs	Percentage	0.00	35.00	40.00	42.00

Comments (achievements against targets):

The status of the end target of this Indicator is 225% achieved.

The project supported the organization and restructuring of 20 Municipal Emergency Committees (CODEMs) in municipalities of the Sula Valley and the organization of 205 Local Emergency Committees (CODELs) that were equipped and received training, for a total of 225 Emergency Committees functioning effectively surpassing the target of 100.

The active participation of women in CODEMs and CODELs management positions, reached 42%, surpassing the target of 40%. Both CODEMs and CODELs are key organizational units that positively impact community resilience and response capacity.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
2.2 At least 85% of sampled technical staff from municipalities rate training received under the Project as Satisfactory	Percentage	0.00 30-Nov-2012	70.00 13-Dec-2012	85.00 08-Apr-2019	96.00 30-Jun-2021



Comments (achievements against targets):

The status of the end target of this Indicator is 113% achieved. Target increased by 15%, to measure satisfaction of training provided under the project to technical staff in selected municipalities.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
2.3 Database of risk and vulnerability analyses and municipal plans is publicly available	Percentage	0.00 30-Nov-2012	100.00 13-Dec-2012		100.00 30-Jun-2021

Comments (achievements against targets):

The status of the end target of this Indicator is 100% achieved.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
2.4 Number of municipalities with new and/or updated municipal planning or management tools with a risk management approach	Number	0.00 01-Mar-2019	16.00 08-Apr-2019		18.00 30-Jun-2021

Comments (achievements against targets):

The status of the end target of this Indicator is 113% achieved. This indicator was added in the 2019 Project Restructuring. Related to former PDO-Level Results Indicator 3: At least 16 participating municipalities have adopted DRM Plans (PMGRs), Land Use Plans (PMOTs) and Emergency Plans (PEMs) based



on the Project's participatory methodology. The indicator measured the municipal governments that adopted municipal planning focusing on risk management and/or intervention strategies. After the reorganization of SEPLAN, the land use plans (PMOTs) are captured under the Municipal Development Plan, measured separately through this new Intermediate results indicator [2.4].

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
2.5 Participants in consultation activities during project implementation (number)	Number	0.00 30-Nov-2012	0.00 13-Dec-2012	14,094.00 08-Apr-2019	34,448.00 30-Jun-2021
2.5 (a) Participants in consultation activities during project implementation - female	Number	0.00 30-Nov-2012	0.00 13-Dec-2012	6,423.00 08-Apr-2019	14,692.00 30-Jun-2021
2.5(b) Participants in consultation activities during project implementation – indigenous / afro Honduran	Number	0.00 01-Mar-2019	1000.00 08-Apr-2019		1,929.00 30-Jun-2021

Comments (achievements against targets):

The status of the end target of this Indicator is 244% achieved.

The Project reached 34,448 participants (from which 14,692 were women and 1,929 were Indigenous Peoples and Afro-Honduran communities), significantly exceeding the target that was 14,094 for the total participants (6,423 women and 1,000 Indigenous Peoples and Afro-Honduran communities).



Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
2.6 Number of Community Early Warning Systems Strengthened / Rehabilitated through the provision of equipment by the project.	Number	0.00 01-Mar-2019	12.00 08-Apr-2019		12.00 30-Jun-2021

Comments (achievements against targets):

The status of the end target of this Indicator is 100% achieved.

Component: Implementation of Mitigation Measures

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
3.1 Prioritized structural mitigation measures implemented	Number	0.00 30-Nov-2012	60.00 13-Dec-2012	40.00 08-Apr-2019	40.00 30-Jun-2021

Comments (achievements against targets):

The status of the end target of this Indicator is 100% achieved. At appraisal, 60 mitigation measures were planned without clarifying the number of structural and non-structural measures. Therefore, in the 2019 Project Restructuring, the targets for implementing 40 structural mitigation measures and 20 nonstructural mitigation measures were defined and separated.



Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
3.2 Prioritized nonstructural mitigation measures implemented	Number	0.00 01-Mar-2019	20.00 08-Apr-2019		55.00 30-Jun-2021

Comments (achievements against targets):

The status of the end target of this Indicator is 275% achieved.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
3.3 Percentage of a sampled direct beneficiaries that rate structural mitigation measures implemented as satisfactory (reflect their priorities)	Percentage	0.00 30-Nov-2012	70.00 13-Dec-2012	85.00 08-Apr-2019	97.00 30-Jun-2021
3.3(a) Percentage of a sampled direct female beneficiaries that rate structural mitigation measures implemented as satisfactory (reflect their priorities)	Percentage	0.00	70.00	85.00	97.00



Comments (achievements against targets):

The status of the end target of this Indicator is 114% achieved.

97% of a sampled direct beneficiaries reported satisfaction with the structural mitigation measures as well as 97% of a sampled direct female beneficiaries.

Target increased by 15%. The indicator was modified to measure the satisfaction of the direct beneficiaries in each implemented structural mitigation measure.

Component: Project Management, Monitoring and Evaluation

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
4.1. Baseline for Project impact, Mid-Term Report, and Final Evaluation Report completed in a timely fashion	Number	0.00 30-Nov-2012	3.00 13-Dec-2012		3.00 30-Jun-2021

Comments (achievements against targets):

The status of the end target of this Indicator is 100% achieved.

Component: Contingency Emergency Response Component

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised	Actual Achieved at Completion
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				Target	
5.1 CERC established and ready to provide access to financial resources to Honduras in case of an eligible emergency	Number	0.00 30-Nov-2012	1.00 13-Dec-2012		1.00 30-Jun-2021

Comments (achievements against targets):

The CERC was activated twice, the first time to support the Government in the COVID-19 pandemic response (June 2020) and the second time to respond to Tropical Cyclones Eta and Iota (May 2021).

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
5.2 OSI and/or UAM prioritized for COVID-19 response supported by COPECO.	Number	0.00 01-Jun-2020	8.00 10-Jun-2020		12.00 30-Jun-2021

Comments (achievements against targets):

This indicator was added to provide support to the Government's response to the COVID-19 pandemic. In coordination with the regional offices of COPECO and the Ministry of Health, the contracted firm carried out field visits and evaluated 12 sites. Then, the firm prepared 12 files for each prioritized OSI and UAM in legal, technical, environmental, biosafety, and financial aspects. Also, the firm prepared the terms of reference for the construction and supervision of the 12 (minor) works. However, in November 2020, the Eta and Iota Tropical Cyclones heavily affected most of these health centers; therefore, the identified scope of the CERC work became obsolete, which led the GoH to cancel these activities. The GoH letter request (dated May 3, 2021) included a new EAP in response to the Tropical Cyclones Eta and Iota and a revised EAP in response to the COVID-19 pandemic. On May 11, 2021 the Bank approved



the activation of the CERC to assign uncommitted funds to finance immediate recovery activities to address the compound impacts of tropical cyclones Eta and Iota (US\$432,929) and redirect the COVID19 pandemic response (US\$100,108).



B. KEY OUTCOMES BY INDICATORS AND COMPONENTS (Table 1)

Outcome 1: National-level DRM capacities strengthened	
PDO-Level Indicators	1. Direct project beneficiaries 1.a) Female beneficiaries 2. At least 85% of a representative sample of direct Project beneficiaries are satisfied with COPECO's DRM Project activities 2.a) At least 85% of sampled female beneficiaries are satisfied with COPECO's DRM Project activities. The project benefited 1,343,780 people (105% of the targeted 1,285,000 beneficiaries), with 52% being female beneficiaries (reaching 102% of the project target); and with 96% of sampled beneficiaries reportedly satisfied with COPECO's DRM activities (achieving 113% of the target), with 93% satisfaction from the female sample (reaching 109% of the target).
Intermediate Results Indicators	1.1 Standard methodology for municipal development and territorial planning developed and disseminated 1.2 Number of annual climate and meteorological reports/bulletins issued by the COPECO - National Center for Atmospheric Oceanographic and Seismic Studies (CENAOS) 1.3 Number of hazard-monitoring stations collecting and transmitting data
Component 1 Key Outputs: Strengthening of National-Level DRM Capacities	- A standard methodology for municipal development and territorial planning was developed and disseminated - The COPECO - CENAOS issued 130 annual climate and meteorological reports/bulletins 42 of hazard-monitoring stations collecting and transmitting data were established
Outcome 2: Municipal and Community-level DRM capacities strengthened	
PDO-Level Indicators	3. At least 18 participating municipalities have adopted DRM Plans (PMGRs), and Emergency Plans (PEMs) based on the Project's participatory methodology. 4. Cities with improved livability, sustainability, and/or management. The project achieved its targets with 18 municipalities adopting PMGRs and PEMs (reaching 100% of the target), and 38 cities have improved livability, sustainability, and/or management because of the Project (surpassing the target at 190%).



Intermediate Results Indicators	2.1 CODEMs and CODELs established and functioning effectively 2.1.a) Women participating actively in management positions of CODEMs and CODELs 2.2 At least 85% of sampled technical staff from municipalities rate training received under the Project as Satisfactory 2.3 Database of risk and vulnerability analyses and municipal plans is publicly available 2.4 Number of municipalities with new and/or updated municipal planning or management tools with a risk management approach 2.5 Participants in consultation activities during project implementation 2.5.a) Participants in consultation activities during project implementation – female 2.5.b) Participants in consultation activities during project implementation – indigenous / afro Honduran 2.6 Number of Community Early Warning Systems Strengthened / Rehabilitated through the provision of equipment by the project
Component 2 Key Outputs: Strengthening of Municipal and Community-Level DRM Capacities	• The project supported the organization and restructuring of 20 Municipal Emergency Committees (CODEMs) in municipalities of the Sula Valley and the organization of 205 Local Emergency Committees (CODELs) that were equipped and received training for a total of 225 Emergency Committees functioning effectively surpassing the target of 100. • The active participation of women in management positions reached 42% surpassing the target of 40%. • The Project provided capacity-building workshops to the CODELs on climate change, gender mainstreaming in shelter management, Community Based Early Warning Systems (CBEWS), DRM, simulations and drills, seismographs and accelerographs operation, and hydrometeorological stations. • The Project reached 34,448 participants, from which 14,692 were women and 1929 were Indigenous Peoples or Afro-Honduran communities, significantly exceeding the target that was 14,094 for the total participants, 6,423 for women, and 1,000 for Indigenous Peoples. • A geoportal was created for public access to the information as well as explanatory material. In 2020, the hazard database of the Indigenous Peoples territory of Garífuna and Tolupan was added to the geoportal as part of the Natural Hazard Atlas developed for Indigenous Peoples and Afro-Honduran communities.



Outcome 3: Mitigation measures implemented and functioning	
PDO-Level Indicators	5. At least 90% of a representative sample of mitigation works is assessed independently as technically, economically and environmentally satisfactory or above. The project achieved its target with 100% of the mitigation works evaluated as satisfactory (111% achieved).
Intermediate Results Indicators	3.1 Prioritized structural mitigation measures implemented 3.2 Prioritized nonstructural mitigation measures implemented 3.3 Percentage of a sampled direct beneficiaries that rate structural mitigation measures implemented as satisfactory 3.3(a) Percentage of a sampled direct female beneficiaries that that rate structural mitigation measures implemented as satisfactory (reflect their priorities)
Component 3 Key Outputs: Implementation of Mitigation Measures	• 40 prioritized structural mitigation measures implemented • 55 prioritized nonstructural mitigation measures implemented • 97% of sampled direct beneficiaries reported satisfaction with structural mitigation measures as well as 97% of a sampled direct female beneficiaries. • 13 Atlases of natural hazards in the Communities of Indigenous Peoples of the Sula Valley were designed and shared with the Tolupan and Garífuna communities.
Outcome 4: Government capacity to respond promptly and effectively to an eligible emergency improved³²	
PDO-Level Indicators	6. Time taken to disburse funds requested by Government for an eligible emergency. The CERC was activated twice during project implementation. In both cases, it took three weeks to access the funds (four-week target).
Intermediate Results Indicators	5.1 CERC established and ready to provide access to financial resources to Honduras in case of an eligible emergency 5.2 OSI and/or UAM prioritized for COVID-19 response supported by COPECO
Component 5 Key Outputs: Contingency Emergency Response Component	• The CERC was activated twice, the first time to support the Government in the COVID-19 pandemic response (June 2020) and the second time to respond to Tropical Cyclones Eta and Iota (December 2020). • 12 OSI and UAM were prioritized for COVID-19 response supported by COPECO.

³² The government's capacity to respond to emergencies was also improved through the institutional strengthening activities of the Project, shown in Component 2 (See the dotted line in the Theory of Change).



C. RESULTS FRAMEWORK STORYLINE (Table 2)

Indicator Name at Appraisal	Indicator Name (April 08, 2019 restructuring)	Indicator Name (June 10, 2020 restructuring)	Baseline at Appraisal	Baseline (April 08, 2019 restructuring)	Baseline (June 10, 2020 restructuring)	End Target at Appraisal	End Target (April 08, 2019 restructuring)	End Target (June 10, 2020 restructuring)	Achieved (2013-2021) In #s	Achieved (2013-2021) In %	NC=No change N=New R=Revised D=Deleted	Reason of change/ Comments
PDO-Level Results Indicators												
[1] Direct project beneficiaries [Core] (Number)	NC	NC	0	0	0	850,000	1,285,000	1,285,000	1,343,780	105%	NC: Indicator name R: End Target	The end target was increased to 1,285,000 due to the Project scale-up of activities. This was a CORE indicator only at appraisal.
[1(a)] Female beneficiaries [Core breakdown] (Percentage)	NC	NC	0	0	0	51	51	51	52	102%	NC	This was a CORE breakdown indicator only at appraisal.
[2] At least 70% of a representative sample of direct Project beneficiaries are satisfied with COPECO's DRM Project activities [third level on a four-level scale] (Percentage)	NC	NC	0	0	0	70	85	85	96	113	NC: Indicator name R: End Target	Same indicator, target increased by 15% due to the Project scale-up of activities.
[2(a)] At least 70% of sampled female beneficiaries are satisfied with COPECO's DRM project activities (Percentage)	NC	NC	0	0	0	70	85	85	93	109	NC: Indicator name R: End Target	
[3] At least 16 participating municipalities have adopted DRM Plans (PMGRs), Land Use Plans (PMOTs) and Emergency Plans (PEMs) based on the Project's participatory methodology (Number)	[3] At least 18 participating municipalities have adopted DRM Plans (PMGRs), and Emergency Plans (PEMs) based on the Project's participatory methodology (Number)	NC	0	0	0	16	18	18	18	100	R: Indicator name and end target	Target increased by two (2) more municipalities. After the reorganization of SEPLAN, the land use plans (PMOTs) are now captured under the Municipal Development Plan, which is measured separately in a new Intermediate results indicator [2.4].



Indicator Name at Appraisal	Indicator Name (April 08, 2019 restructuring)	Indicator Name (June 10, 2020 restructuring)	Baseline at Appraisal	Baseline (April 08, 2019 restructuring)	Baseline (June 10, 2020 restructuring)	End Target at Appraisal	End Target (April 08, 2019 restructuring)	End Target (June 10, 2020 restructuring)	Achieved (2013-2021) In #s	Achieved (2013-2021) In %	NC=No change N=New R=Revised D=Deleted	Reason of change/ Comments
---	[4] Cities with improved livability, sustainability, and/or management [Core] (Number)	NC	---	0	0	---	20	20	38	190	N	New CORE indicator. This indicator was added to measure the cumulative number of cities or municipalities for which the direct interventions of the project have resulted in improvements in (a) living conditions for residents; (b) financial, economic, environmental, and/or social sustainability of the city; and/or (c) city planning, systems, and governance.
[4] At least 90% of mitigation measures financed by the Project are evaluated independently as technically, economically and environmentally sound (Percentage)	[5] At least 90% of a representative sample of mitigation works is assessed independently as technically, economically and environmentally satisfactory or above (Percentage)	NC	0	0	0	85	90	90	100	111	R: Indicator name and end target	The word "sound" was replaced for "satisfactory or above". Satisfactory is defined as achieving a level of at least 4 on a 5 level-scale. And, instead of evaluating 85% of all the works, the indicator changed to evaluate a representative sample of those works. However, in the MTR and final evaluation, 100% of the works were evaluated. Also, there is an error on page 18 of the PAD, as the ninth column named "End target" has 85%, and the indicator name starts with "At least 90%..."; and, the Cumulative Target Value (eighth column) is 90%.



Indicator Name at Appraisal	Indicator Name (April 08, 2019 restructuring)	Indicator Name (June 10, 2020 restructuring)	Baseline at Appraisal	Baseline (April 08, 2019 restructuring)	Baseline (June 10, 2020 restructuring)	End Target at Appraisal	End Target (April 08, 2019 restructuring)	End Target (June 10, 2020 restructuring)	Achieved (2013-2021) In #s	Achieved (2013-2021) In %	NC=No change N=New R=Revised D=Deleted	Reason of change/ Comments
[5] Time taken to disburse funds requested by Government for an eligible emergency (Weeks)	NC	NC	0	0	0	4	4	4	3	133	NC	The number of the PDO-Level Indicator changed from 5 to 6, due to the adding of a new indicator (PDO-Level Indicator 4).
Intermediate Results Indicators												
Component 1: Strengthening of National-Level DRM Capacities												
[1.1] Standard methodology for municipal development and territorial planning developed and disseminated (Number)	NC	NC	0	0	0	1	1	1	1	100	NC	Same indicator and target.
[1.2] Environmental Management Unit operating effectively in COPECO (Number)	D	---	0	---	---	1	---	---	---	---	D	The original objective was to foresee compliance with environmental protection measures in the implementation of the mitigation works. Then, with the creation of MiAmbiente (former SERNA), an environmental license was provided for each work; thus, there was no need to create an Environmental Unit in COPECO for this purpose.
---	[1.2] Annual climate and meteorological reports/bulletins issued by the COPECO-CENAOS (Number)	NC	---	0	0	---	40	40	130	325	N	This indicator was added to measure the climate and meteorological reports/bulletins issued by the COPECO. CENAOS provided the information.



Indicator Name at Appraisal	Indicator Name (April 08, 2019 restructuring)	Indicator Name (June 10, 2020 restructuring)	Baseline at Appraisal	Baseline (April 08, 2019 restructuring)	Baseline (June 10, 2020 restructuring)	End Target at Appraisal	End Target (April 08, 2019 restructuring)	End Target (June 10, 2020 restructuring)	Achieved (2013-2021) In #s	Achieved (2013-2021) In %	NC=No change N=New R=Revised D=Deleted	Reason of change/ Comments
[1.3] Seismic monitoring network established and functioning (Percentage)	[1.3] Hazard-monitoring stations collecting and transmitting data (Number)	NC	0	0	0	100	42	42	42	100	R: Indicator name and end target	This indicator was revised to include not only seismic, but hydromet stations. Therefore, this indicator measured the seismic and hydro-meteorological monitoring stations that were equipped and collecting and transmitting data.
Component 2: Strengthening of Municipal and Community-Level DRM Capacities												
[2.1] CODEMs and CODELs established and functioning effectively (Number)	NC	NC	0	0	0	60	100	100	225	225	NC: Indicator name. R: End Target.	This indicator measured the operational activities of each CODEM, as well verified the establishment and strengthening of CODELs by the project.
[2.1 (a)] Women participating actively in management committees of CODEM and CODELs (Percentage)	[2.1 (a)] Women participating actively in management positions of CODEMs and CODELs (Percentage)	NC	0	0	0	35	40	40	42	105	R: Indicator name and end target	Replaced the word "committees" for "positions" to expand the scope of the indicator.
[2.2] At least 70% of sampled technical staff from municipalities rate training received under the Project as Satisfactory (Percentage)	NC	NC	0	0	0	70	85	85	96	113	NC: Indicator name. R: End Target.	Target increased by 15%, to measure the satisfaction of training provided under the project to technical staff in selected municipalities.
[2.3] Database of risk and vulnerability analyses and municipal plans is publicly available (Percentage)	NC	NC	0	0	0	100	100	100	100	100	NC	Same indicator and target.



Indicator Name at Appraisal	Indicator Name (April 08, 2019 restructuring)	Indicator Name (June 10, 2020 restructuring)	Baseline at Appraisal	Baseline (April 08, 2019 restructuring)	Baseline (June 10, 2020 restructuring)	End Target at Appraisal	End Target (April 08, 2019 restructuring)	End Target (June 10, 2020 restructuring)	Achieved (2013-2021) In #s	Achieved (2013-2021) In %	NC=No change N=New R=Revised D=Deleted	Reason of change/ Comments
---	[2.4] Municipalities with new and/or updated municipal planning or management tools with a risk management approach (Number)	NC	---	0	0	---	16	16	18	113	N	Related to former PDO-Level Results Indicator 3. The indicator measured the municipal governments that adopted municipal planning focusing on risk management and/or intervention strategies.
[2.4] Participants in consultation activities during project implementation [Core] (Number)	NC	NC	0	0	0	To be assessed during implementation	14,094	14,094	34,448	244	R: End Target	Same indicator. Target changed from "To be assessed during implementation" to 14,094. This was a CORE indicator only at appraisal.
[2.4 (a)] Participants in consultation activities during project implementation-female /Indigenous and afro-Honduran [Core breakdown] (Number)	[2.5 (a)] Participants in consultation activities during project implementation – female (Number)	NC	0	0	0	To be assessed during implementation	6,423	6,423	14,692	229	R: Indicator name and end target	Women are now measured independently. Target changed from "To be assessed during implementation" to 6,423 women. This was a CORE breakdown indicator only at appraisal.
---	[2.5 (b)] Participants in consultation activities during project implementation– indigenous/ afro Honduran (Number)	NC	---	0	0	---	1,000	1,000	1,929	193	N	Indigenous/afro-Honduran are now measured independently. Autochthonous population disaggregated indicator to measure community engagement.
---	[2.6] Community Early Warning Systems Strengthened/ Rehabilitated through the	NC	---	0	0	---	12	12	12	100	N	The indicator was added to measure the number of community early warning systems strengthened and/or rehabilitated by



Indicator Name at Appraisal	Indicator Name (April 08, 2019 restructuring)	Indicator Name (June 10, 2020 restructuring)	Baseline at Appraisal	Baseline (April 08, 2019 restructuring)	Baseline (June 10, 2020 restructuring)	End Target at Appraisal	End Target (April 08, 2019 restructuring)	End Target (June 10, 2020 restructuring)	Achieved (2013-2021) In #s	Achieved (2013-2021) In %	NC=No change N=New R=Revised D=Deleted	Reason of change/ Comments
	provision of equipment by the project (Number)											the project through the purchase of equipment and/or spare parts.
Component 3: Implementation of Mitigation Measures												
[3.1] Prioritized mitigation measures implemented (Number)	[3.1] Prioritized structural mitigation measures implemented (Number)	NC	0	0	0	60	40	40	40	100	R: Indicator name and end target	At appraisal, 60 mitigation measures were planned without clarifying the number of structural and non-structural measures. Therefore, in the 2019 RP, the targets for implementing 40 structural and 20 nonstructural mitigation measures were defined and separated.
---	[3.2] Prioritized nonstructural mitigation measures implemented (Number)	NC	---	0	0	---	20	20	55	275	N	
[3.2] At least 70% of sampled direct beneficiaries agree that mitigation measures implemented under the Project reflect their priorities (Percentage)	[3.3] Percentage of a sampled direct beneficiaries that rate structural mitigation measures implemented as satisfactory (reflect their priorities)	NC	0	0	0	70	85	85	97	114	R: Indicator name and end target	Target increased by 15%. The indicator was modified to measure the satisfaction of the direct beneficiaries in each implemented structural mitigation measure.
[3.2 (a)] At least 70% of sampled direct female beneficiaries agree that mitigation measures implemented under the Project reflect their priorities (Percentage)	[3.3 (a)] Percentage of a sampled direct female beneficiaries that rate structural mitigation measures implemented as satisfactory (reflect their priorities)	NC	0	0	0	70	85	85	97	114	R: Indicator name and end target	



Indicator Name at Appraisal	Indicator Name (April 08, 2019 restructuring)	Indicator Name (June 10, 2020 restructuring)	Baseline at Appraisal	Baseline (April 08, 2019 restructuring)	Baseline (June 10, 2020 restructuring)	End Target at Appraisal	End Target (April 08, 2019 restructuring)	End Target (June 10, 2020 restructuring)	Achieved (2013-2021) In #s	Achieved (2013-2021) In %	NC=No change N=New R=Revised D=Deleted	Reason of change/ Comments
Component 4: Project Management, Monitoring and Evaluation												
[4.1] Baseline for Project impact, Mid-Term Report, and Final Evaluation Report completed in a timely fashion (Number)	NC	NC	0	0	0	3	3	3	3	100	NC	Same indicator and target.
Component 5: Contingency Emergency Response Component												
[5.1] CERC established and ready to provide access to financial resources to Honduras in case of an eligible emergency (Number)	NC	NC	0	0	0	1	1	1	1	100	NC	Same indicator and target.
---	---	[5.2] OSI and/or UAM prioritized for COVID-19 response supported by COPECO (Number)	---	---	0	---	---	8	12	150	N	This indicator was added to provide support to the Government's response to the COVID-19 pandemic.

Ref.:

Revised end targets and indicators.

Errors in targets identified in the PAD.



ANNEX 2. BANK LENDING AND IMPLEMENTATION SUPPORT/SUPERVISION

A. TASK TEAM MEMBERS

Name	Role
Preparation	
Enrique Pantoja, Ana Campos Garcia	Task Team Leader(s)
Anemarie Guth Proite	Procurement Specialist
Jose Simon Rezk	Financial Management Specialist
Jason Jacques Paiement	Social Specialist
Tuuli Johanna Bernardini	Social Specialist
Supervision/ICR	
Eduardo Ereno Blanchet	Task Team Leader
Emma Katrine Alexandra Phillips	Task Team Leader
Horacio Cristian Terraza	Task Team Leader
Carlos Lago Bouza, Zoila Catherine Abreu Rojas	Procurement Specialist(s)
Solange Maria Olivera	Financial Management Specialist
Eduardo Franca De Souza	Financial Management Specialist
Ricardo Marten Caceres	Social Specialist
Solmari Jazmin Huelle	M&E Specialist
Rodrigo Andres Donoso Arias	Team Member
Diacono Raul Vera Hernandez	Environmental Specialist
Lizardo Narvaez Marulanda	Task Team Leader
Claudia Patricia Pacheco Florez	Team Member
Mirtha Liliana Escobar Saenz	Team Member
Dianna M. Pizarro	Social Specialist
Leanne Farrell	Environmental Specialist
Enrique Pantoja	Task Team Leader
Haris Sanahuja	Team Member
Angelica Calderon	Procurement Team
Maria Carolina Rogelis Prada	Impact Evaluation Specialist

**B. STAFF TIME AND COST**

Stage of Project Cycle	Staff Time and Cost	
	No. of staff weeks	US\$ (including travel and consultant costs)
Preparation		
FY12	.600	34,113.87
FY13	10.712	147,912.50
FY18	0	5,006.75
Total	11.31	187,033.12
Supervision/ICR		
FY13	10.471	91,669.79
FY14	22.532	170,361.60
FY15	32.747	255,686.65
FY16	17.825	116,448.35
FY17	18.576	203,583.92
FY18	8.545	276,682.81
FY19	9.320	141,907.32
FY20	18.177	157,198.32
Total	138.19	1,413,538.76

**ANNEX 3. PROJECT COST BY COMPONENT**

Components	Planned costs at Appraisal (In US \$)	Revised Planned costs, including cancellation of CERC funds -April 2014- (In US \$)	Revised Planned costs, including reallocation of CERC funds -April 2019- (In US \$)	Revised Planned cost including reallocation of CERC funds -June 2020- (In US \$)	Actual Cost as of July 31, 2021 (Expenditure at Project Closing -in US\$M-)	Actual Cost as of July 31, 2021 (in %)
Component 1: Strengthening of National level DRM Capacities	2.20	2.20	4.74	4.70	4.47	95%
Component 2: Strengthening of Municipal and Community Level DRM Capacities	2.90	2.90	5.07	4.30	4.25	99%
Component 3: Implementation of Mitigation Measures	13.05	13.05	13.13	13.70	11.76	86%
Component 4: Project Management, Monitoring and Evaluation	1.85	1.85	3.06	2.77	2.82	102%
Component 5: Contingency Emergency Response Component	10.00	6.00	0.00	0.53	0.42	79%
Total	30.00	26.00	26.00	26.00	23.72	91%



ANNEX 4. EFFICIENCY ANALYSIS

Economic and Financial Analysis (EFA)

I. PROJECT BACKGROUND

1. The **Project Development Objectives (PDOs)** are to support Honduras to: (a) continue strengthening its capacity for integrated disaster risk management at the municipal and national level; and (b) improve its capacity to respond promptly and effectively to an Eligible Emergency.
2. The **Project outcomes** are: (i) National-level DRM capacities strengthened, (ii) Municipal and Community-level DRM capacities strengthened, (iii) Mitigation measures implemented; and (iv) Government capacity to respond promptly and effectively to an eligible emergency improved.
3. The PGRD focused its efforts on strengthening Honduras capacity for integrated Disaster Risk Management (DRM) at the national, municipal, and community levels, supporting the analysis, planning, decision-making, and implementation of actions aimed at addressing disaster vulnerabilities in the Sula Valley region and preventing the effects of potential hazards from causing severe damage or disruption to lives, livelihoods, and ecosystems. Structural risk mitigation works were built in strategic sites in consultation with the local population and based on local knowledge and technical criteria to ensure better functionality.
4. At the national level, this included investments in equipment, software development, meteorological stations, and at the municipal and community levels, it focused on strengthening the organization of municipal and local emergency committees (CODEMs and CODELs). In addition, 40 structural mitigation works were built in 20 municipalities prioritized by the Project, which aimed at reducing vulnerability to natural hazards.
5. The outcomes related to the strengthening of Honduras' capacity for integrated DRM resulted from the interventions and outputs included in Components 1, 2, and 3; i.e., it would be achieved by strengthening DRM institutions and policy-making, enhancing coordination between central institutions and key municipal and local actors, incorporating DRM in territorial planning with participatory methodologies, implementing structural and nonstructural mitigation measures in 20 municipalities, and ensuring social inclusion, technical quality, and environmental sustainability. The outcome "Capacity to respond promptly and effectively to an Eligible Emergency improved" resulted from the interventions and outputs included in Component 5.

II. PROJECT ECONOMIC AND FINANCIAL ANALYSIS (EFA)

6. **Scope of the Analysis.** This EFA covered five aspects: (i) Financial Analysis; (ii) Ex-post Economic Analysis; (iii) Project costs; and (v) Sensitivity Analysis.
7. **Information Sources:** Most of the information included in this section derives from the economic and financial evaluations ex-ante (project appraisal) and ex-post (project evaluation of 35 works). The data required for this evaluation was provided by the PIU. Additional information comes from the PGRD Impact Evaluation Report and key inputs completed as part of this report – such as the final PGRD Report (which includes the final costs and beneficiaries of the 40 works).
8. **Methodology.** The following activities were carried out the EFA:



- a) A database was created on the 40 works distributed as follows: 35 mitigation works built over the period 2013-2019 plus the five works built in 2020 and 2021.
- b) This database contains a description of each mitigation work (number, name, location by department, municipality, and community; year of construction, the final cost of each work; and the number of direct and indirect beneficiaries per work). In addition, the database contains the costs by component: those originally approved, those revised in 2014 and 2019, and the actual closing costs (as of July 31, 2021). Also, the database includes the economic indicators for the 40 mitigation works implemented under Component 3, and the project evaluation (Components 1 to 5).

9. Evaluation criteria:

- a) **Economic Analysis** measures the impact of the project on the economy of the country, region, or locality where the project was implemented. The Economic Analysis also examines the costs and benefits, but in some cases using non-monetary values, since this allows it to measure the regional, national, or local economy. Also, it incorporates benefits and costs that do not carry monetary values and can be attributed.

The economic evaluation indicators considered in this analysis were Benefit-Cost Ratio (B/C), Net Present Value (NPV), and Internal Rate of Return (IRR), as described below:

- **Benefit-Cost Ratio (BCR):** This indicator calculates the present value of total benefits (total project income or social benefits) compared to total costs, including investments and current expenses. A cost-benefit analysis is a process of comparing the projected or estimated costs and benefits (or opportunities) associated with a project decision to determine if the project is profitable. The project is considered profitable if the BCR is greater than 1. If it is equal to 1, the project is neither profitable nor lossy. If it is less than 1, the project investment generates losses and implies that the investment would not be recovered. The BCR is used almost exclusively as a measure of social benefits.
- **Net Present Value (NPV):** NPV is interpreted as the value of the net benefits (income minus costs) generated by an investment when considering a discount rate. If NPV is used as an investment selection criterion, a project is acceptable if its present value is equal to or greater than zero. The NPV can prioritize and select between projects or different alternatives that involve the same investment amounts. In such cases, projects with an NPV equal to or greater than zero are selected, ranking them according to the order of magnitude of the NPV. The formula used in this evaluation was:

$$NPV = \sum_{t=1}^n \frac{R_t}{(1+i)^t}$$

Where:

R_t = Net cash inflow-outflows during a single period t

i = Discount rate or return that could be earned in alternative investments

t = Number of years or periods



Interpretation:

- If NPV = 0: The investment in the project does not produce gains or losses. The choice or acceptance of the project will depend on other criteria.
 - If NPV > 0: The project would generate higher profits than alternative projects of equal risk (or higher than the required rate). It is ideal for the acceptance of the project.
 - If NPV < 0: The project would generate losses concerning the required profitability. It must be rejected.
- **Internal Rate of Return (IRR):** IRR represents the financial rate of return on the money invested in the project. The IRR is an index that corresponds to a discount rate that makes the present value of the total costs equal to the value of the total benefits during the project's useful life or period of analysis. This rate indicates the maximum interest that the project could pay for the resources used without incurring losses. If the IRR is used as an investment selection criterion, a project is acceptable if its IRR is equal to or greater than the opportunity cost of capital. The formula used in this evaluation was:

$$IRR = \sum_{t=1}^n \frac{B_t - C_t}{(1 + i)^t} = 0$$

Where:

B_t = Cash flow of benefits during a single period t

C_t = Cash flow of costs during a single period t

i = Discount rate or return that could be earned in alternative investments

t = Number of years or periods

Interpretation:

The IRR will be compared to the opportunity cost or profitability of alternative projects of equal risk (minimum profitability required or "r").

- If IRR = r: The IRR equals the profitability of other similar projects. The choice/acceptance of the project will depend on other criteria.
 - IRR > r: It is ideal for the choice or acceptance of the project.
 - IRR < 0: The project will have lower profitability than required. It must be rejected.
- b) The **Financial Analysis** examines costs, benefits at real prices and determines their relationships in terms of indicators that reflect individuals' or companies' points of view or private interest. It also provides information on when funds are required and when income is expected to be received (the ex-ante analysis). It also shows when the productive activities were executed and the real flow costs and income during a period of analysis, and the final balance (the ex-post analysis). It consists of determining if a project will obtain sufficient returns to recover the funds invested in it and generate earnings, which would mean that it is a financially feasible project. In the Financial Analysis of projects, two types of analysis are done: 1) Projections of the financial statements to examine the behavior of the project's finances to judge its ability to meet the planned financing, and 2) The application of indicators determine the potential capacity of the return on the planned investment. In addition, Financial Analysis provides a series of indicators that determine how and measure the investments are converted into available monetary cash and if this is sufficient to meet the payments of obligations and the project's operating costs.



The PGRD 2013-2021 financial reports were analyzed for this evaluation to calculate the evaluation indicators, the flows of funds from the financial execution of each component from March 2013-July 2021, with the information on the structural mitigation works' investments, at the local and municipal levels.

As stated in the PAD, one of the main challenges of promoting disaster mitigation and prevention is to demonstrate that its potential benefits exceed its costs in terms of lives saved and property protected. Estimating the costs of disaster risk reduction activities is relatively easy, while estimating their benefits is complicated by its probabilistic nature. Although economic effects cannot be verified, there are indications of positive economic efficiency regarding the results of the Project.

10. EFA ratings:

The evaluation ratings are based on a 4-point scale:

Rating	Qualification	Description
4	High	Efficiency exceeds expectations.
3	Substantial	Efficiency is what you would expect in the Project sector.
2	Modest	Efficiency is below expectations in the Project sector.
1	Negligible	The efficiency is very low compared to the benefits.

III. EFA Results

Economic Analysis

11. The Evaluation was based on the collection, analysis, and interpretation of secondary information to define the efficiency of the Project implementation based on the following economic indicators: BCR, NPV, and IRR.
12. The following segments of the population were considered in this analysis:
 - 1) **Indirect beneficiaries:** this includes communities that are not located near the structural mitigation measures but who received information on disaster risk and the mitigation measures through the communication campaigns of PGRD.
 - 2) **Direct beneficiaries:** this includes the communities directly impacted by the 40 structural mitigation measures and received training.
 - 3) **Municipal and Local Emergency Committees:** The third group includes beneficiaries that make up the institutional framework that promotes DRM at the local level through the Municipal Emergency Committees (CODEMs) and the Local Emergency Committees (CODELs). PGRD provided training, technical assistance and supported institutionalization and adoption of the Disaster Risk Mitigation.
13. The results obtained from the ex-post Economic Analysis of the PGRD are higher than those estimated in the ex-ante Economic Analysis (see Table 1):

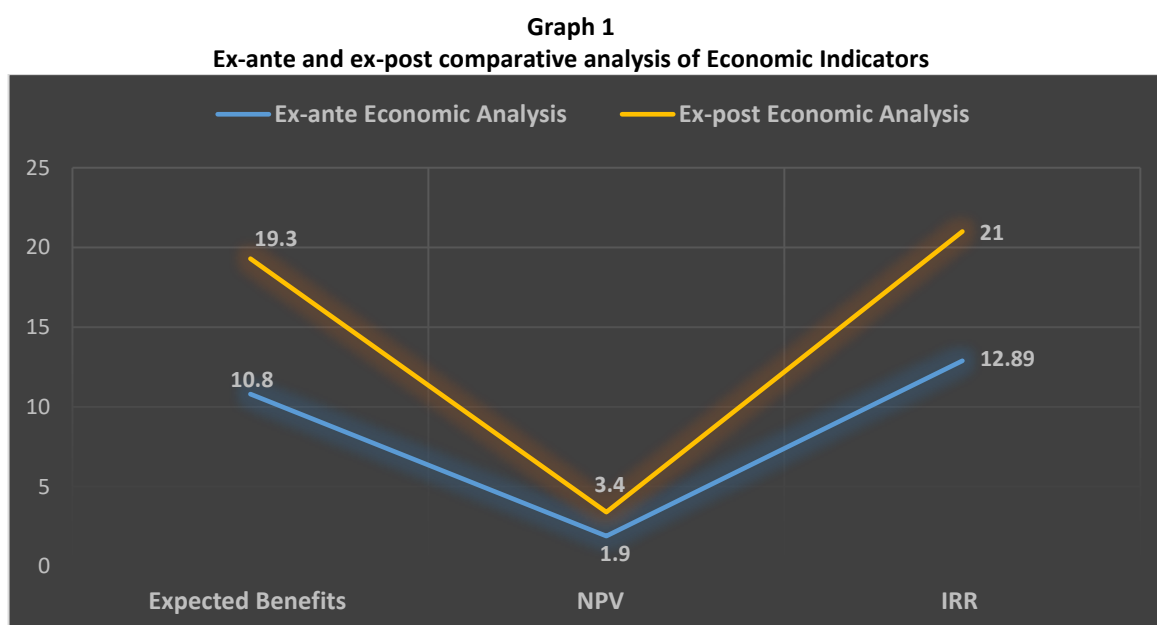


Table 1: Economic Analysis Indicators

Evaluation indicators	Ex ante	Ex post	DIFFERENCE
Expected Benefits	US\$10.8 million	US\$19.3 million	US\$8.5 million
NPV	US\$1.9 million	US\$3.4 million	US\$1.5 million
IRR	12.89%	21%	8.11%

Source: WB Economic and Financial Evaluation (August 2021).

14. The ex-post economic analysis was based on actual project outputs, project costs, and estimates of the likely impact of the forty (40) structural mitigation measures built. Its results show that the Project is profitable with an economic Net Present Value (NPV) of US\$ 3.4 million and an Internal Rate of Return (IRR) of 21 percent. The economic benefits of the Project were US\$19.3 million, with a BCR of 1.21. The Project's economic benefits exceed the associated costs by US\$8.5 million, NPV by US\$1.5 million, and IRR by 8.11%, using a 10 percent discount rate and 25 years of analysis. See Graph 1:



Source: WB Economic and Financial Evaluation (August 2021).

15. The ex-post economic analysis was developed under the same methodology used in the ex-ante assessment, based on the following criteria: 1) The same opportunity cost of capital of 10%, and 2) All costs and benefits estimates were projected to 25 years, which was the return period used for the structural mitigation works³³.
16. The forty structural mitigation works built are rated "high" due to a Benefit/Cost ratio greater than 1, a positive NPV, and an IRR above the applied discount rate (10%) obtained in this evaluation. See Table 2 for details on the results of the Economic indicators for each structural mitigation measure.

³³ See costs and benefits criteria used in the ex-ante economic analysis on pages 75 and 76, PAD.



Table 2
Economic Evaluation Indicators: Benefit/Cost (B/C), Net Present Value (NPV), and Internal Rate of Return (IRR)

Description of the structural mitigation measures						Economic indicators		
No.	Name of the work	Department	Municipality	Community	Year of construction	B/C	NPV (In US\$)	IRR
1	Canalization of pluvial water and pedestrian access	Santa Bárbara	Las Vegas	Barrio Monte Fresco / Colonia Orellana	2013	1.34	40,516.55	21%
2	Construction of box culvert bridge to canalize pluvial water and reduce vulnerability	Cortés	San Manuel	Aldea El Porvenir	2013	1.72	94,287.74	19%
3	Construction of box culvert bridge	Cortés	San Antonio de Cortés	Quebrada La Tigra	2013	1.75	62,457.34	20%
4	Canalization of pluvial water	Cortés	Pimienta	Barrio Suyapa	2013	1.34	37,161.83	21%
5	Canalization of pluvial water	Cortés	Potreriillos	El Nuevo Higuerito Central	2013	1.35	45,263.03	21%
6	Canalization of pluvial water	Yoro	El Negrito	Barrio Abajo	2014	1.34	78,523.83	21%
7	Construction of stormwater pipe	Yoro	El Progreso	Barrio San Juan	2014	1.58	170,946.11	22%
8	Construction of gabion wall to reduce risk in the left riverbank of the Cacaupala river	Santa Bárbara	Petoa	Barrio Pueblo Nuevo	2014	1.68	143,000.12	20%
9	Protection of the left riverbank of the Santa Cruz creek	Yoro	Morazán	Aldea Cuyamapa	2014	1.34	77,823.98	21%
10	Protection of the left levee, El Zapote sector, Guaruma I, to reduce risk from the Chamelecon river	Cortés	La Lima	El Zapote / Guaruma	2014	1.35	88,917.53	21%
11	Construction of stormwater pipe to reduce risk in the El Calvario and El Centro neighborhoods	Cortés	Santa Cruz de Yojoa	Barrios El Calvario y El Centro	2014	1.37	134,574.63	18%
12	STAGE II- Protection of the left levee	Cortés	La Lima	El Zapote	2015	1.34	80,639.65	21%
13	Construction of levee on the left riverbank of the San Idelfonso river	Cortés	Omoa	Aldea Potrerillos	2015	1.34	78,818.53	21%
14	Protection of the right riverbank of the metallic bridge on the Chamelecon river	Cortés	Puerto Cortés	Aldea Baracoa	2015	1.34	77,738.46	21%
15	Canalization of pluvial water and protection of the left riverbank of the El Carmen lagoon	Cortés	Choloma	Colonia Valle de Sula	2015	1.38	108,207.58	22%
16	Canalization of pluvial water	Atlántida	Tela	Colonia Venecia	2015	1.07	25,441.62	14%
17	Protection of banks of the stormwater canal and repairing of box culvert bridge	Cortés	Villanueva	Colonia La Independencia	2016	1.34	79,985.06	21%



Description of the structural mitigation measures						Economic indicators		
No.	Name of the work	Department	Municipality	Community	Year of construction	B/C	NPV (In US\$)	IRR
18	STAGE II: Construction of gabion wall to reduce risk in the left floodplain of the Cacaupala river	Santa Bárbara	Petoa	Aldea Pueblo Nuevo	2016	1.49	96,649.11	18%
19	Canalization of pluvial water	Cortés	San Manuel	Aldea El Plan	2016	1.38	107,427.06	22%
20	Canalization of pluvial water	Yoro	Morazán	Aldea San Juan Camalote	2016	1.36	74,291.47	22%
	<i>Complementary work of the structural mitigation measure #11 stormwater pipe</i>	<i>Cortés</i>	<i>Santa Cruz de Yojoa</i>	<i>Barrios El Calvario y El Centro</i>	<i>2016</i>			
21	Canalization of pluvial water in the north-east sector	Yoro	El Progreso	Ciudad de El Progreso	2017	1.38	107,043.32	22%
22	Riverbank protection works in the Piedras Amarillas creek	Santa Bárbara	Las Vegas	Quebrada Piedras Amarillas	2017	1.34	75,085.83	21%
23	Canalization of pluvial water	Cortés	Omoa	Sector Sur Casco Urbano	2017	1.34	80,252.92	21%
24	Construction of box culvert bridge on the Chasnigua creek in El Sauce community	Cortés	Villanueva	Comunidad El Sauce	2018	1.75	150,382.79	20%
25	Construction of box culvert bridge on the Naco river	Santa Bárbara	Quimistán	Río Naco	2018	1.74	121,002.51	20%
26	Canalization of pluvial water from the Callejas hill	Cortés	Potrerosillos	Barrios Reparto Pedregal y Poder Ciudadano	2018	1.40	144,735.81	23%
27	Construction of levee on the left bank of the Helado river and hanging bridge	Cortés	Santa Cruz de Yojoa	Aldea Buenos Aires-La Jutosa	2018	1.40	163,002.99	23%
28	Canalization of pluvial water	Yoro	Santa Rita	Barrios Lara Independencia y Subirana	2018	1.40	150,587.52	23%
29	Construction of levee on the left bank of the Chiquito river and canalization of pluvial water	Cortés	San Francisco de Yojoa	Colonia La Paz	2018	1.35	54,923.54	21%
30	Protection of right riverbank and construction of a pedestrian bridge on the El Sauce creek	Cortés	San Pedro Sula	Colonia Los Ángeles	2019	1.40	152,396.21	23%
31	Riverbank protection of the Inter-sindical creek	Cortés	San Pedro Sula	Colonia SITRATELH	2019	1.40	131,761.83	23%



Description of the structural mitigation measures						Economic indicators		
No.	Name of the work	Department	Municipality	Community	Year of construction	B/C	NPV (In US\$)	IRR
32	Construction of box culvert bridge on the Toloa river	Atlántida	Tela	Comunidad de Toloa	2019	1.84	258,596.11	21%
33	Box culvert bridge and left riverbank protection	Cortés	San Francisco de Yojoa	Colonia Belén	2019	1.83	281,137.35	21%
34	Construction of stormwater pipe and box culvert bridge	Santa Bárbara	Quimistán	Barrio San Martín Pinalejo	2019	1.83	378,300.47	21%
35	Canalization of pluvial water	Cortés	Pimienta	Pimienta Km 86	2019	1.35	90,423.28	21%
36	Construction of bridge on the La Cienega creek	Cortés	San Antonio de Cortés	Comunidad El Caulote y Nueva Unión	2020	1.86	716,242.97	24%
37	Construction of embankment and canalization of pluvial water	Cortés	Puerto Cortés	Colonia La Esperanza y Nuevos Horizontes	2020	1.45	224,580.08	24%
38	Second stage of the canalization of pluvial water in the southern sector	Cortés	Choloma	Colonia López Arellano	2020	1.29	179,826.04	20%
39	Canalization of pluvial water of the Rosario Nuñez neighborhood	Yoro	El Negrito	Colonia Rosario Nuñez	2020	1.43	236,026.66	24%
40	Canalization of pluvial water	Yoro	Santa Rita	Barrio Municipal	2020	1.32	200,391.05	21%
	<i>Complementary work of the structural mitigation measure #16 to reinforce a pluvial water canal</i>	<i>Atlántida</i>	<i>Tela</i>	<i>Colonia Venecia</i>	<i>2020</i>			

Source: WB Ex-post Economic and Financial Evaluation (August 2021).

-
17. **Positive economic indicators results were obtained for each structural mitigation measure.** However, due to the characteristics of each work, there are differences in the indicators. For example, work 36 “Construction of a bridge over the Quebrada La Ciénaga to reduce risk in the El Caulote, and Nueva Unión Community in the Municipality of San Antonio de Cortés” presents the highest evaluation indicators: BCR 1.86, NPV US\$716,242.97 and an IRR of 24%, while Work 16 “Canalization of rainwater for risk reduction in Colonia Venecia in the Municipality of Tela”, built in 2015, presents the lowest evaluation indicators: BCR 1.07, NPV US\$25,441.62, and an IRR 14%. This is because the work required complementary works to strengthen the canal for an investment of US\$157,725.46 in 2020.
18. The Economic Analysis concludes that the PGRD Project was an efficient intervention that demonstrated a successful approach in its design and implementation and was also well-received by several of the stakeholders who had a specific role in its performance.

Financial Analysis

19. As of July 31, 2021, the Project had a good financial performance, which presents a financial execution of US\$23,715,204.00 or 99% regarding the disbursed funds (of the total disbursed: US\$23,926,796.00),; and 91% of the total loan of US\$26 million. As of July 31, 2021, the remaining balance was US\$211,592.00 (non-disbursed funds), distributed as follows: US\$114,654.00 (Component 5) and US\$96,938.00 (Special Account, Components 1 to 4).
20. During implementation, several financial changes were made that did not affect the Project objectives, such as: a) The first Project Restructuring (2014) canceled US\$4 million of the IDA Credit from the CERC component (Balance: US\$ 26 million), b) Due to the Mid-Term Review (2017), a third Project Restructuring (2019) resulted in several significant changes, including a reallocation of funds from the CERC Component to all other Components, as well as a change in component costs, c) On June 2, 2020, a first CERC activation was requested and approved by the Association to support the Recipient’s response to the COVID-19 pandemic for an amount of US\$533,124. The scope of this first CERC was to assess and rehabilitate 12 local health centers. In November 2020, the Eta and Iota Tropical Cyclones heavily affected most of these health centers; therefore, the identified scope of the CERC work became obsolete, which led the GoH to cancel these activities. The GoH submitted a revised Emergency Action Plan (EAP) to modify the scope of the first CERC and limit it to US\$100,108 worth of equipment to attend the COVID-19 emergency. The WB received a letter from the Minister of Finance dated May 3, 2021, confirming its interest to activate the CERC to assign uncommitted funds under Category 2 in the withdrawal table outlined in Section IV.A of Schedule 2 to the Financing Agreement to finance immediate recovery activities to address the compound impacts of tropical cyclones Eta and Iota (US\$432,929) and redirect the COVID19 pandemic response (US\$100,108). The request included a new EAP in response to the Tropical Cyclones Eta and Iota and a revised EAP in response to the COVID-19 pandemic. Cumulatively in both EAPs, the estimate for Bank financing needed was US\$533,037. The amount of US\$533,124 was already reallocated from Category (1) to Category (2) of the disbursement table under the CERC, activated for the COVID-19 response. This amount was also already disbursed to the Recipient and was available at the PGRD’s Designated Account when the new request of CERC activation was submitted.
21. Therefore, the following table represents the **changes of the Project Costs** regarding the PAD, the Project restructurings and changes mentioned above, as well as the Actual Costs:

Table 3
Project Costs: Original, Revised, and Actual Costs as of July 2021 (in US\$)

Components	Planned costs at Appraisal (In US \$)	Revised Planned costs including reallocation of CERC funds April 2014 (In US \$)	Revised Planned cost including reallocation of CERC funds April 2019 (In US \$)	Revised Planned cost including reallocation of CERC funds June 2020 (In US \$)	Actual Cost (Expenditure at Project Closing -in -US\$-)	Actual Cost (Expenditure at Project Closing (in %))
Component 1: Strengthening of National - level DRM Capacities	2.20	2.20	4.74	4.70	4.47	17%
Component 2: Strengthening of Municipal and Community - Level DRM Capacities	2.90	2.90	5.07	4.30	4.25	16%
Component 3: Implementation of Mitigation Measures	13.05	13.05	13.13	13.70	11.76	45%
Component 4: Project Management, Monitoring and Evaluation	1.85	1.85	3.06	2.77	2.82	11%
Component 5: Contingency Emergency Response Component	10.00	6.00	0.00	0.53	0.42	2%
Totals.....	30.00	26.00	26.00	26.00	23.72	91%

Source: PGRD Final Evaluation Report (September 2020). PGRD Final Costs (2012-July 2021). 2014-2020 Restructuring Papers.

22. The Project Costs by component and year is presented below in Table 4:

Table 4
2012-July 2021 Project Costs by Component and Year (US\$)

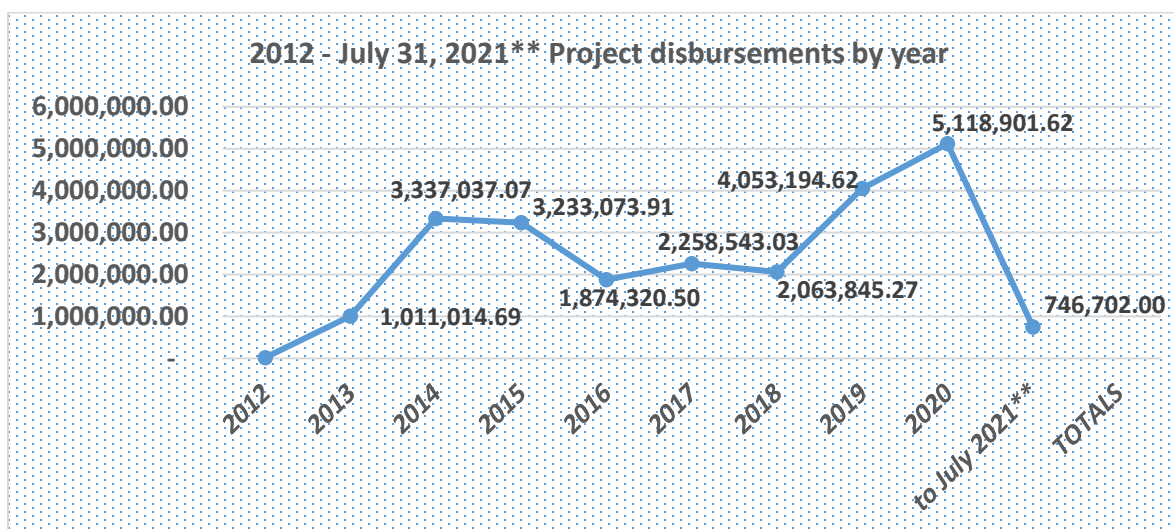
YEAR	COMPONENT I	COMPONENT II	COMPONENT III	COMPONENT IV	COMPONENT V	TOTALS
2012	-	-	-	18,571.29	-	18,571.29
2013	288,534.20	147,770.93	350,201.68	224,507.88	-	1,011,014.69
2014	646,74.96	1,123,954.75	1,279,310.94	287,027.42	-	3,337,037.07
2015	408,582.16	1,201,306.06	1,327,206.91	295,978.78	-	3,233,073.91
2016	288,257.00	314,589.57	979,600.39	291,873.54	-	1,874,320.50
2017	283,695.51	645,500.29	906,099.51	423,247.72	-	2,258,543.03
2018	278,844.83	259,890.36	1,159,600.35	365,509.73	-	2,063,845.27
2019	734,889.90	476,322.28	2,456,478.17	385,504.27	-	4,053,194.62
2020	1,525,744.44	78,408.76	3,071,718.05	409,005.37	34,025.00	5,118,901.62
To July 2021	12,416.00	-	227,173.00	122,668.00	384,445.00	746,702.00
TOTALS	4,467,708.00	4,247,743.00	11,757,389.00	2,823,894.00	418,470.00	23,715,204.00

Source: PGRD Final report (2013-2021). Pg. 95.

PGRD Final Evaluation (September 2020). Pg. 104.

23. The Project Costs by year is presented below in Graph 2:

Graph 2: 2012 - June 2021 Project Costs



Source: PGRD Final report (2013-2021) Pag. 95.

PGRD Final Evaluation (September 2020) Pag. 104.

24. **Total Project Costs (Components 1 to 5) adjusted by the July 31, 2021 SDR deflator (See Table 5):** The **planned costs** (at Appraisal) were: SDR 19.5 million (US\$ 30 million equivalent); which represents to date US\$ 27.47 million (adjusted by the SDR deflator); the **revised costs** (April 2014, April 2019 and June 2020 restructurings) were SDR 17.90 million (US\$ 26.0 million equivalent), which represents to date US\$ 23.81 million (adjusted by the SDR deflator). The **actual costs** (as of July 2021) were SDR 16.78 million (US\$ 23.72 million equivalent), which represents to date US\$ 23.02 million (adjusted by the SDR deflator). This reflects savings in actual costs of US\$0.70 million (US\$23.72 - US\$23.02).
25. Also, in the case of the PGRD, the changes were reflected in the exchange rates from SDR to US\$, because the Project budget was established in SDRs, which represented US\$ 2.98 million (US\$ 26 million - US\$ 23.02 million) in savings (adjusted by the SDR deflator on July 31, 2021), as the Project achieved its targets with fewer funds (US\$ 23.02 million, adjusted by the SDR deflator on July 31, 2021), compared to the revised budget of US\$ 23.81 million (adjusted by the SDR deflator on July 31, 2021). *The original budget was US\$ 30 million (equivalent, without the deflator adjustment), and the revised budget was US\$ 26 million (equivalent, without the deflator adjustment).*
26. The difference between the real costs and the nominal costs, or the deflator, was measured over the life of the Project in terms of a base period (Appraisal, November 2012) through the closing date (June 30, 2021) to establish changes in the money value, comparing them with the achievement of physical targets. A deflator serves as a price index in which the effects of inflation are nulled. During the PGRD implementation period, the real effective exchange rate index fluctuated while trending low. During this period, inflation, based on GDP deflator, also fluctuated while growing. Overall, these variables did not represent significant challenges during project implementation.

Table 5. Project Cost by Component (adjusted by the SDR deflator)
(In US\$ million)

Components	Planned costs at Appraisal Original Cost- (In US \$ M)	Planned costs at Appraisal (In US \$ M) - Planed costs in US\$ based SDR deflator-	Revised Planned costs including reallocation of CERC funds April 2014 (In US \$ M)	Revised Planned cost including reallocation of CERC funds April 2019 (In US \$ M)	Revised Planned cost including reallocation of CERC funds June 2020 (In US \$ M)	Actual Cost (Expenditure at Project Closing -in -US\$ M-)	Actual Cost (Expenditure at Project Closing (in %)
Component 1: Strengthening of National -level DRM Capacities	2.20	2.01	2.01	4.34	4.30	4.34	18%
Component 2: Strengthening of Municipal and Community - Level DRM Capacities	2.90	2.66	2.66	4.64	3.94	4.13	17%
Component 3: Implementation of Mitigation Measures	13.05	11.95	11.95	12.02	12.55	11.41	48%
Component 4: Project Management, Monitoring and Evaluation	1.85	1.69	1.69	2.80	2.54	2.74	11%
Component 5: Contingency Emergency Response Component	10.00	9.16	5.49	0.00	0.49	0.41	2%
Totals	30.00	27.47	23.81	23.81	23.81	23.02	97%

27. As mentioned above, Component 5 (CERC) was first activated in June 2020, with an amount of US\$ 533,124 to respond to the COVID-19 crisis, and again this Component was activated in May 2021 to support the Government response of the Tropical Cyclones Eta and Iota (See Table 6).

Table 6: Planned, revised, and actual CERC Costs (in US\$)

Description	Planned costs	Revised planned costs	Actual Cost to Dec-2020	Actual Cost Jan-Jul 2021	Balance as of July 31, 2021
1 COVID -19 Emergency Response	533,124	100,108	34,025	40,122	25,961
2 ETA and IOTA Emergency Response	---	432,929	-	344,323	88,606
TOTALES	533,124	533,037	34,025	384,445	114,567

Source: 2013-2021 PGRD Final Report, Pag. 100.

28. As of July 31, 2021, US\$23,926,796.00 (99%) has been disbursed, compared with the actual costs (US\$ 23,715,204.00). Therefore, the remaining balance was US\$211,592.00 (non-disbursed funds), distributed as follows: US\$114,654.00 (Component 5) and US\$96,938.00 (Special Account, Components 1 to 4) is shown in Table 7:

Table 7
Project Disbursements as of July 31, 2021

DESCRIPTION	AMOUNT (US \$)
Disbursed to July 31, 2021	23,926,796.00
Actual costs as of July 31, 2021	23,715,204.00
Balance as of July 31, 2021	211,592.00
Balance composition	211,592.00
Special Account BCH 11101-20-000-760-8 *	114,654.00
Special Account BCH 11101-20-000-726-8 **	96,938.00

Source: 2013-2021 PGRD Final Report.

* Component 5, Account Balance, Pag. 103

** Balance of the Account of Components 1 – 4, Pag. 97.

Main investments of the Project:

29. The main investments of the PGRD were made in Component 3 in the 20 selected municipalities with structural and nonstructural mitigation measures, the preparation of feasibility and design studies, and the municipal plans for risk management and land use planning, which reached US\$10,965,986.91 and was distributed as follows (see Table 8):

Table 8
Component 3: Implementation of Mitigation Measures and Other Complementary Works (In US\$)

YEARS	MITIGATION WORKS	OTHER INVESTMENTS ³⁴	TOTALS
2013	437,096.79	874,06.70	524,503.49
2014	1,238,282.07	185,467.65	1,423,749.72
2015	1,051,135.54	110,212.70	1,161,348.24
2016	814,482.84	23,554.75	838,037.59
2017	607,579.56	66,127.62	673,707.18
2018	1,374,930.14	120,852.24	1,495,782.38
2019	1,735,578.44	120,852.24	1,856,430.68
2020	2,647,084.47	118,170.16	2,765,254.63
2021	-	227,173.00	227,173.00
TOTALS	9,906,169.85	1,059,817.06	10,965,986.91

Source: WB Economic and Financial Evaluation (August 2021).

30. In the Department of Cortés, 58% (US\$5.78 million) of the total investments of the mitigation works were invested in 12 municipalities. In the Department of Yoro, 24% (US\$.2.3 million), in the Department of Santa Bárbara 11% (US\$1.1 million), and in the Department of Atlántida 7% (US\$ 0.66 million). See Table 9.
31. At the municipal level, the largest investments were made in the Municipalities of Santa Rita of the Department of Yoro (8.5%), Choloma of the Department of Cortés (7.7%), US\$844,918.70, and

³⁴ Other investments include: Non-structural mitigation works, the preparation of feasibility and design studies, and the municipal plans for risk management and land use planning.

US\$765,956.60. They were followed by the Municipality of Tela of the Department of Atlántida (6.7%), the Municipality of El Negrito of the Department of Yoro (6.6%), the municipalities of Santa Cruz de Yojoa (6.3%), San Antonio de Cortés (6.2%), Puerto Cortés (6.1%) and San Pedro Sula (6.0%), of the Department of Cortés.

32. The total investment in the 40 structural mitigation measures by department and municipality is presented below in Table 9.

Table 9
Structural Mitigation Measures Investment by Department and Municipality (In US\$)

DEPARTMENTS / MUNICIPALITIES		No. OF WORKS	AMOUNTS (in US\$)	%
1	DEPARTAMENT OF ATLÁNTIDA	2	661,675.32	6.7
1.1	Municipio de Tela	2	661,675.32	6.7
2	DEPARTAMENT OF CORTÉS	24	5,776,758.27	58.3
2.1	Municipio de Choloma	2	765,956.60	7.7
2.2	Municipio de La Lima	2	403,118.20	4.1
2.3	Municipio de Omoa	2	383,552.48	3.9
2.4	Municipio de Pimienta	2	294,177.08	3.0
2.5	Municipio de Potrerillos	2	401,757.74	4.1
2.6	Municipio de Puerto Cortés	2	605,390.42	6.1
2.7	Municipio de San Antonio de Cortés	2	609,394.48	6.2
2.8	Municipio de San Francisco de Yojoa	2	407,095.20	4.1
2.9	Municipio de San Manuel	2	335,633.59	3.4
2.10	Municipio de San Pedro Sula	2	590,138.40	6.0
2.11	Municipio de Santa Cruz de Yojoa	2	625,075.37	6.3
2.12	Municipio de Villanueva	2	355,468.71	3.6
3	DEPARTAMENT OF SANTA BÁRBARA	6	1,124,734.25	11.4
3.1	Municipio de Las Vegas	2	270,616.95	2.7
3.2	Municipio de Petoa	2	332,735.63	3.4
3.3	Municipio de Quimistán	2	521,381.67	5.3
4	DEPARTAMENT OF YORO	8	2,343,002.01	23.7
4.1	Municipio de El Negrito	2	651,735.01	6.6
4.2	Municipio de El Progreso	2	490,293.75	4.9
4.3	Municipio de Morazán	2	356,054.55	3.6
4.4	Municipio de Santa Rita	2	844,918.70	8.5
TOTALS		40	9,906,169.85	100.0

Source: WB Economic and Financial Evaluation (August 2021).

Sensitivity Analysis

33. A sensitivity analysis is an indirect way of evaluating risks and uncertainty in projects to evaluate the following factors: delays, decreased profits, higher than expected costs, among others. For this EFA, a 20% reduction in benefits and increased costs by 20% was applied to analyze those factors (See Table 10).

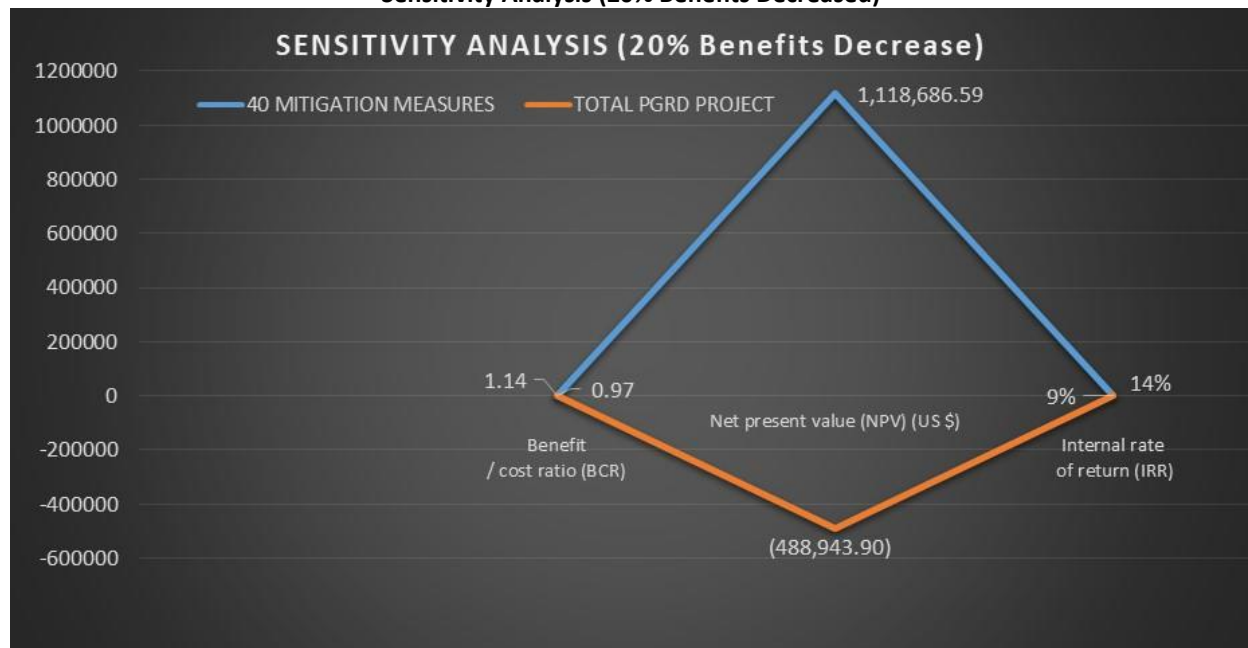
Table 10. PGRD Sensitivity Analysis

DESCRIPCIÓN	SENSITIVITY ANALYSIS (20% Decreased Benefits)			SENSITIVITY ANALYSIS (20% Increased Costs)		
	BCR	NPV (In US \$)	IRR	BCR	NPV (In US \$)	IRR
40 STRUCTURAL MITIGATION MEASURES (COMPONENT 3)	1.14	1,118,686.59	14%	1.19	1,794,319.27	15%
TOTAL PGRD PROJECT	0.97	(488,943.90)	9%	1.01	186,688.77	10%

Source: WB Economic and Financial Evaluation (August 2021).

34. At the structural mitigation measures level, **assuming the benefits decrease by 20%**, the indicators will be positive (BCR= 1.14, NPV = - US \$1,118,686.59 and IRR= 14%) **and if costs increase by 20%** the works also have obtained positive results (BCR= 1.19, NPV= US\$ 1,794,319.27 and IRR= 15%). (See Table 10 and Graphs 3 and 4).

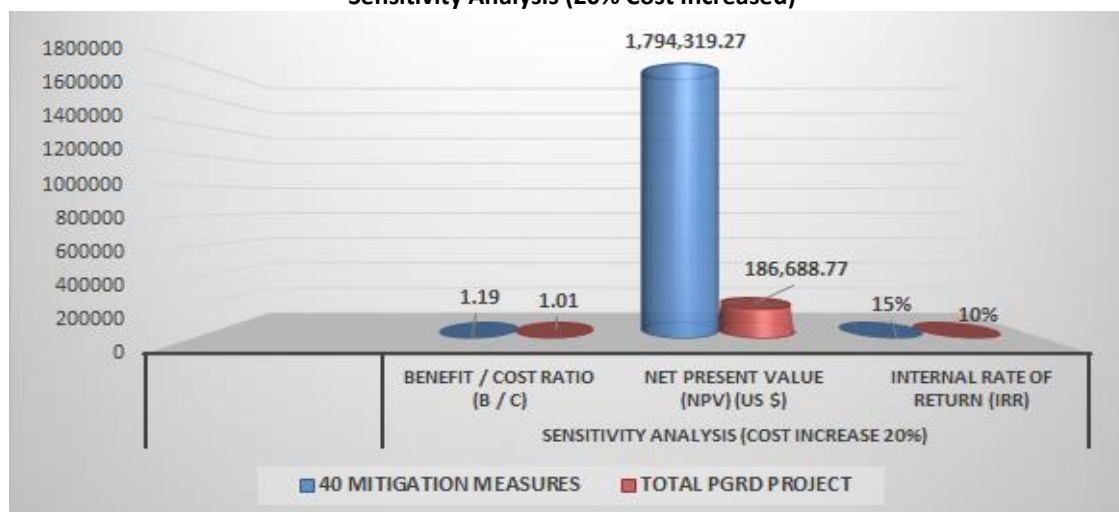
Graph 3
Sensitivity Analysis (20% Benefits Decreased)



Source: WB Economic and Financial Evaluation (August 2021).

35. At the project level, **assuming the benefits decrease by 20%**, the indicators will be negative (BCR= 0.97, NPV = - US \$488,943.9 and IRR= 9%) **and if costs increase by 20%** the Project would have obtained positive results (BCR= 1.01, NPV= US\$ 186,688.77 and IRR= 10%). (See Table 10 and Graphs 3 and 4).

Graph 4
Sensitivity Analysis (20% Cost Increased)



Source: WB Economic and Financial Evaluation (August 2021).

36. The economic indicators obtained in the sensitivity analysis show that profitability is more susceptible to a decrease in benefits than an increase in costs.
37. **Aspects of project design and implementation that contributed to efficiency.** The main aspects in terms of project design were that the project was built on a long-standing cooperation with COPECO, which had already pre-selected the 20 municipalities and also had worked with the existing institutions, in particular at the local level, greatly facilitating the start of the project activities and contributed to the efficiency of the use of resources.

Conclusions

Economic Analysis

1. The Economic Analysis was based on actual project outputs, project costs, and estimates of the likely impact of the forty (40) structural mitigation measures built. The analysis shows that the Project is profitable with an economic Net Present Value (NPV) of US\$ 3.4 million and an Internal Rate of Return (IRR) of 21 percent. The economic benefits of the Project were US\$19.3 million, with a Benefit/Cost (B/C) ratio of 1.21.
2. The Project's economic benefits exceed the associated costs by US\$8.5 million, NPV by US\$1.5 million, and IRR by 8.11%, using a 10 percent discount rate and 25 years of analysis, comparing them with the ex-ante economic analysis.
3. The forty structural mitigation works built were rated "high" due to a Benefit/Cost ratio greater than 1, a positive NPV, and an IRR above the applied discount rate (10%).

Financial Evaluation

4. As of July 31, 2021, the Project financial execution was US\$23,715,204.00 (of the total disbursed: US\$23,926,796.00), or 99% regarding the disbursed funds; and 91% of the total loan of US\$26 million (revised planned costs).
5. As of July 31, 2021, the remaining balance was US\$211,592.00 (non-disbursed funds), distributed as follows: US\$114,654.00 (Component 5) and US\$96,938.00 (Special Account, Components 1 to 4).
6. At the Department level, 58% of the total investments of the mitigation works were executed in 12 municipalities in the Department of Cortés. In the Department of Yoro, almost 24% (US\$ 2.3 million) was invested, in the Department of Santa Bárbara 11% (US\$ 1.1 million), and in the Department of Atlántida around 7% (US\$ 0.66 million).
7. At the Municipal level, the largest investments were made in the Municipalities of Santa Rita (US\$844,918.70 or 8.5%), Department of Yoro; and Choloma (US\$765,956.60 or 7.7%), Department of Cortés; followed by the Municipalities of Tela (6.7%), Department of Atlántida; El Negrito (6.6%), Department of Yoro; and Santa Cruz de Yojoa (6.3%), San Antonio de Cortés (6.2%), Puerto Cortés (6.1%) and San Pedro Sula (6.0%), Department of Cortés.

Sensitivity Analysis

8. The economic indicators obtained in the sensitivity analysis show that profitability is more susceptible to a decrease in benefits than an increase in costs.

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- Database for the PGRD Final Economic Evaluation. COPECO/PGRD (July 2020).

ANNEX 5. COMPLEMENTARY EFFICACY ANALYSIS (IMPACT EVALUATION)

1. A complementary efficacy analysis was carried out to assess the impact of the Project according to the objectives and indicators established in the PAD and the restructurings. This analysis is based on the available documentation that includes: i) the Baseline, the Mid Term Review (MTR), and Final Evaluations; the evaluation of 5 structural mitigation works and one reinforcement work carried out in 2020 and ii) the final report of the Project prepared by the PIU.
2. The efficacy analysis is organized around the Project Development Objectives (PDO), and the four project outcomes: (i) National-level DRM capacities strengthened, (ii) Municipal and Community-level DRM capacities strengthened, (iii) Mitigation measures implemented; and (iv) Government capacity to respond promptly and effectively to an eligible emergency improved.
3. **Information source.** The information to develop this impact evaluation was obtained from the following documents: PGRD Baseline (data collected from November-December 2015); MTR (data collected in February 2017); Final Evaluation (data collected from December 2019 to August 2020); and the evaluation of five structural mitigation works and one reinforcement work carried out in 2020 (through this impact evaluation). The MTR and the Final Evaluation include an assessment of the structural mitigation works and surveys that capture the beneficiary and institutional perceptions of their benefits. However, a detailed impact evaluation based on the quantification of risk reduction provided by the mitigation works is not possible due to the lack of a detailed risk assessment of the before/after scenarios. Therefore, the impact is assessed based on the evaluation reports' existing information, including surveys carried out according to the methodology established during the baseline assessment³⁵. As such, limitations exist assessing structural mitigation works since the perception of beneficiaries and institutions may differ significantly from benefits estimated from a risk-based analysis.

Outcome 1: National-level DRM capacities strengthened

4. The Project was successful in strengthening national institutions on DRM. The specific achievement of this outcome was measured through the PDO-level indicator 1 (Direct project beneficiaries, including a percentage of female beneficiaries) and PDO-level Indicator 2 (Representative sample of direct project beneficiaries, and sampled female beneficiaries, satisfied with COPECO's DRM Project activities). The project surpassed its targets with the project benefiting 1,343,780 people (105% of the targeted 1,285,000 beneficiaries), with 52% being female beneficiaries (reaching 102% of the project target); and with 96% of sampled beneficiaries satisfied with COPECO's DRM activities (achieving 113% of the target), with 93% satisfaction from the female sample (achieving 109% of the target). **All of them were achieved and most surpassed.**
5. **Despite not being captured by the indicators, several capacity-building activities for the Permanent Commission of Contingencies (COPECO) were carried out.** The institutional capacity of COPECO was strengthened through the following activities supported by the Project: South-South knowledge exchange activities in Bogota and Manizalez, Colombia; the construction and equipping of the building for the PIU; acquisition of seven vehicles for the Project and five for COPECO; expansion of the office of

³⁵ Evaluation plan and baseline report, page 14

regional No 2 in San Pedro Sula; a solar photovoltaic system was installed in the COPECO main offices; communication and computing equipment, as well as software, were acquired for the central and regional COPECO offices; and computing equipment, spare geotechnical equipment, and software was acquired for the COPECO Prevention Group and drones were purchased for the Prevention, Preparedness, and Response group and the PGRD. Furthermore, a Code of Good Environmental Practices (*Código de Buenas Prácticas Ambientales*) built COPECO's environmental technical capacity, as did the proposal to update the National Construction Code (*Propuesta de Actualización y promoción del Código Nacional de la Construcción*), which provides practical recommendations to build safer constructions. A multilayered communication strategy was developed that enabled COPECO to effectively communicate with local communities about DRM and the Project (through TV, radio, online, posters, among others).

6. **Territorial Planning and DRM – Strengthening of the General Directorate of Territory Planning (DGOT).** In 2014 the Technical Secretariat of Planning and External Cooperation (SEPLAN) ceased to exist, and its territory ordering responsibilities were assigned to DGOT. The Project supported the strengthening of this new institution by providing equipment, software, and capacity building. A standard methodology for territorial planning with a risk management approach that incorporates risk scenarios was updated and promoted. Based on the methodology, Municipal Development Plans with a Territorial Planning Approach [*Planes de Desarrollo Municipal con enfoque de Ordenamiento Territorial* (PDMOT)] were developed. Furthermore, national databases and systems for territorial planning were strengthened and consolidated, including the Territory Information National System (*Sistema Nacional de Información Territorial - SINIT*), Standards Register of Territory Ordering (*Registro de Normativas de Ordenamiento Territorial - RENOT*), and the Unified Register System (*Sistema Unificado de Registros - SURE*).
7. **Strengthening of the Center of Atmospheric, Oceanographic and Seismic Studies (CENAOS).** The PGRD supported the strengthening of CENAOS through the construction of its headquarters building³⁶ in 2020 and the acquisition of computing and communication equipment, earth station, antenna of stations, control systems for the radar, solar panels, and meteorological stations. Furthermore, the PGRD provided software and training on hydraulic modelling and preventive maintenance of meteorological stations in coordination with CENAOS/COPECO and the Directorate of Water Resources (*Dirección General de Recursos Hídricos - DGRH*) of MiAmbiente³⁷. The support to CENAOS contributed to better forecasting, information processing, and monitoring and early warning systems in the country, and improved coordination between CENAOS and the DGRH, resulting in an improved flow of information for the early warning systems.
8. **Hazard monitoring.** The Project reached the target of 42 monitoring stations collecting and transmitting data³⁸. If sustained and appropriately used, strengthening hydrometeorological and seismic monitoring networks will improve the information for risk assessment and early warning. The interviewed institutional representatives' perception of flood monitoring effectiveness is available in the baseline,

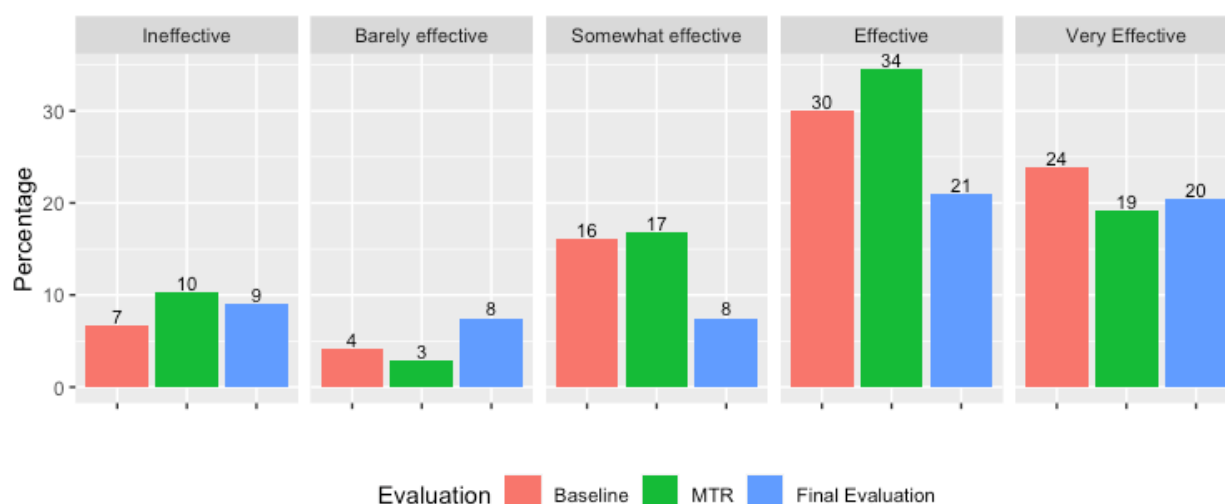
³⁶ According to the PGRD – COPECO Final Report (2021), page 23, the construction site has 675 m2 including a parking area. Air conditioning, equipment and furniture were also provided.

³⁷ PGRD – COPECO Final Report (2021), page 24

³⁸ According to the PGRD – COPECO Final Report (2021), page 22 seismic monitoring equipment was acquired, 5 new seismic monitoring stations were constructed; software, equipment and flood modelling training was provided to SERNA and maintenance was provided to the telemetric stations operated by SERNA; computing equipment and photographic cameras were acquired for the General Directorate of Water Resources; and maintenance was provided to 72 monitoring stations

MTR, and Final Evaluation, as shown in **Error! Reference source not found..** The percentage of interviewees who consider flood monitoring effective and very effective reduced in the Final Evaluation. The same occurs for other hazards such as droughts, forest fires, landslides, and hurricanes. The Final Evaluation explains this behavior, arguing that the understanding of hazard monitoring may not have been clear enough in the baseline. While the explanation in the Final Evaluation may be conceivable, it is also possible that data was not used effectively.

Figure 1. Flood monitoring effectiveness according to the perception of institutional representatives

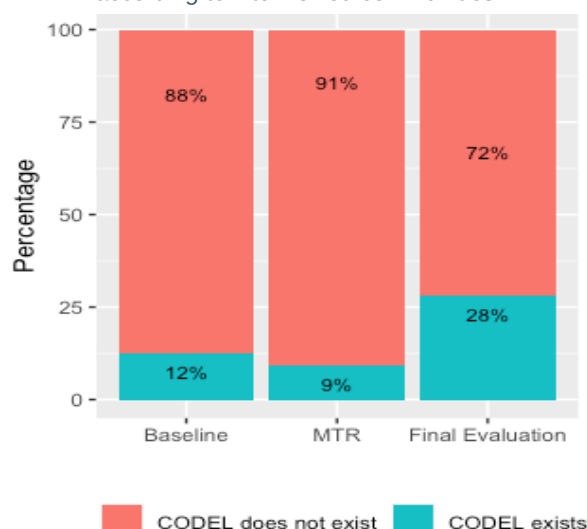


Source: Final Evaluation – Quantitative Evaluation (2020)

Outcome 2: Municipal and Community-level DRM capacities strengthened

9. **The specific achievement of this outcome was measured through** the PDO Indicator 3 [Number of participating municipalities adopted DRM Plans (PMGRs) and Emergency Plans (PEMs), based on the Project's participatory methodology] and PDO Indicator 4 (Cities with improved livability, sustainability, and/or management) and six intermediate results indicators. **All of them were achieved and most surpassed.**
10. **CODEMs and CODELs.** The project supported the organization and restructuring of 20 Municipal Emergency Committees (CODEM) in municipalities of the Sula Valley and the organization of 205 Local Emergency Committees (CODEL) that were equipped and received training for a total of 225

Figure 2. Existence of Local Emergency Committee according to interviewed communities

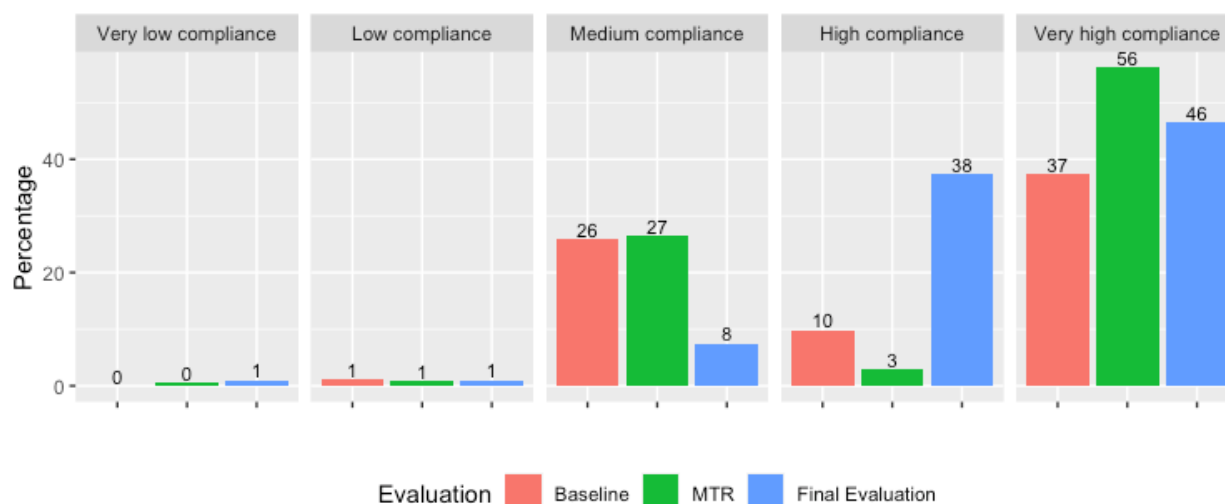


Source : Final Evaluation – Quantitative Evaluation (2020)

Emergency Committees functioning effectively³⁹ surpassing the target of 100. The active participation of women in management positions reached 42% surpassing the target of 40%. Both CODEM and CODEL are key organizational units that positively impact community resilience and response capacity. The strengthening of the Emergency Committees is reflected in the information provided by communities, as shown in **Figure 2**, where 28% of the interviewees recognize the existence of a Local Emergency Committee at the end of the project (compared to 9% in the MTR). **The perception of the effectiveness of the Local Emergency Committees also improved at the final evaluation compared with the baseline.**

11. **Strengthening of institutional capacities.** The Project planned training activities that addressed environmental management, operation/maintenance of structural mitigation works, preparedness, and response⁴⁰. Three emergency drills were carried out⁴¹. According to the Final Evaluation, the perception of the institutional representatives is that the management capacities improved⁴²; 96% of the interviewed technical staff from municipalities and institutional representatives indicated that the level of satisfaction with the training provided by the PGRD – COPECO was medium to very high. Despite the level of satisfaction surpassing the target indicator, the Final Evaluation surveys show that institutional representatives' perception is that the effectiveness of institutional knowledge to implement mitigation measures decreased at the end of the Project (see **Figure 43**). This may be explained by the high rotation of personnel in the municipalities.

Figure 3. Level of satisfaction of institutional representatives on training provided by the PGRD-COPECO



Source : Final Evaluation – Quantitative Evaluation (2020)

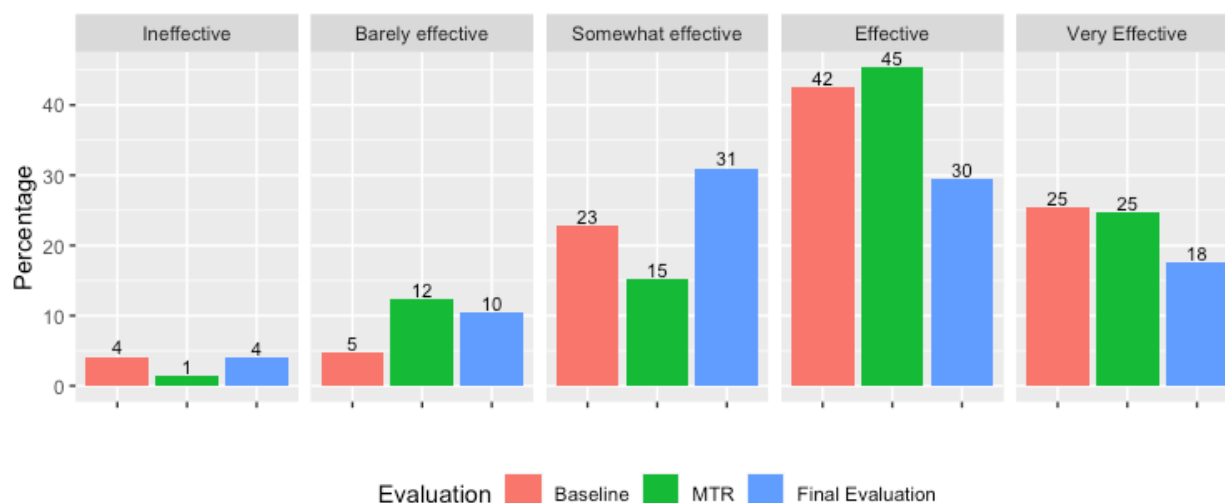
³⁹ PGRD – COPECO Final Report (2021): Page 62

⁴⁰ PGRD – COPECO Final Report (2021): Page 28

⁴¹ According to PGRD – COPECO Final Report (2021): Page 28 the emergency drills were carried out in the municipalities El Progreso, El Negrito and San Francisco de Yojoa.

⁴² PGRD – COPECO Final Evaluation Report (2020): Page 55

Figure 4. Institutional knowledge to implement mitigation tools and measures according to interviewed institutional representatives



Source: Final Evaluation – Quantitative Evaluation (2020)

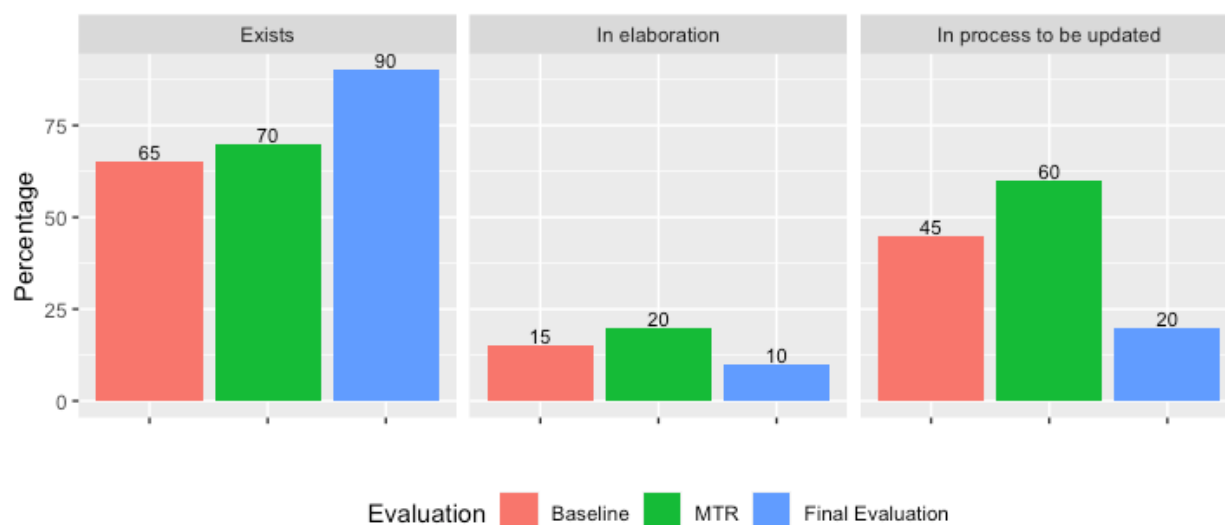
12. **Public access to risk information and municipal plans.** The Project produced digital terrain models as an input into the studies of Characterization and Territorial Planning of the 20 municipalities in the Project area (Sula Valley). These studies were the basis for preparing the Municipal Risk Management Plans, Municipal Emergency Plans, and Municipal Territorial Ordering Plans, which were made publicly available⁴³. The information was included in the DRM Information System and Database of COPECO and the web page of the PGRD. A geoportal⁴⁴ was created for public access to the information as well as explanatory material. In 2020, the hazard database of the territory of the Garífuna and Tolupan communities (Region I – Sula Valley) was added to the geoportal as part of the Natural Hazard Atlas developed for Indigenous Peoples and Afro-Honduran communities.
13. **Risk management/planning tools.** Eighteen new or updated tools (PMGRs and PEMs) that incorporate a risk management approach were reported by the Project surpassing the target of 16⁴⁵. Figure 5 shows the status of the PMGRs according to the Final Evaluation of the Project. This indicates that the number of municipalities with PMGRs increased. The Final Evaluation also indicates that the contents of the PMGRs improved. Similar behavior occurs for the PEMs and the PMOTs. These new or updated plans have also increased the number of ordinances issued by the Municipalities on territory order.

⁴³ The plans can be accessed on <https://www.pgrd-copeco.gob.hn/que-hacemos/capacitacion-y-planificacion-territorial-para-la-gestion-de-riesgos/>

⁴⁴ https://geoportal.copeco.gob.hn/gis/visor/copeco_geoportal

⁴⁵ PGRD – COPECO Final Report (2021): Page 62

Figure 5. Municipal Risk Management Plans status



Source: Final Evaluation – Quantitative Evaluation (2020)

14. **Participation in public consultation.** Workshops were carried out focusing on capacities of the CODELs, climate change, gender mainstreaming in shelter management, Community Based Early Warning Systems, DRM, simulations, and drills, operation of seismographs, accelerographs, and hydrometeorological stations. With these activities, the Project reached 34,448 participants, from which 14,692 were women and 1,929 were Indigenous Peoples or Afro-Honduran communities, **significantly exceeding the target that was 14,094 for the total participants, 6,423 for women, and 1,000 for indigenous or afro Hondurans**⁴⁶.
15. **Community-Based Early Warning Systems (CBEWS).** The Project strengthened/rehabilitated 12⁴⁷ CBEWS⁴⁸. Furthermore, the Project implemented a communication/education strategy that provided information about the CBEWS that included mass media messages and coordination with educational centers. An assessment of the effectiveness of CBEWS is out of the scope of this impact evaluation, and only the information from the survey carried out for the Final Evaluation is available. This shows that **at the end of the Project, the number of interviewees that know that a CBEWS exists in their community increased (see Figure 6). The Final Evaluation also shows that most direct and indirect beneficiaries (56%) think that the CBEWS works**⁴⁹.

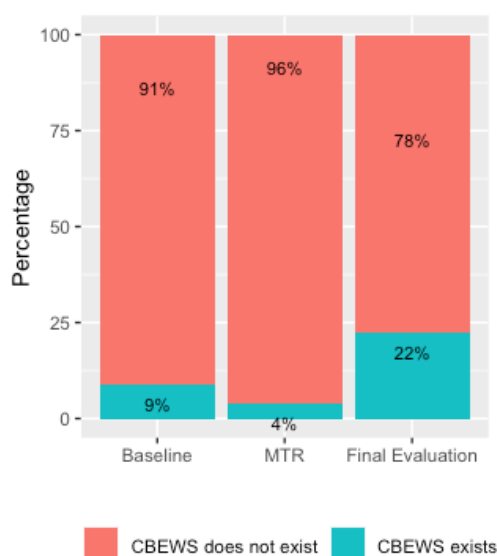
⁴⁶ PGRD – COPECO Final Report (2021): Page 62

⁴⁷ PGRD – COPECO Final Report (2021): Page 63

⁴⁸ According to the PGRD – COPECO Final Report (2021), page 22, the strengthened/rehabilitated CBEWS are in the municipalities: EL Negrito, Morazán, Omoa, Choloma, Puerto Cortes, El Progreso and Potrerillos. The corresponding watersheds are: Guaymas-Guaymon, Guaymas, Omoa, Masca, Cuyamel, Blanco, Chamelecón, Tulian, Rio Ulúa, Rio Pelo, Rio Blanco, where 49 communities are located.

⁴⁹ PGRD – COPECO Final Evaluation Report (2020): Page 113

Figure 6. Knowledge on the existence of a CBEWS according to surveys to direct and indirect beneficiaries



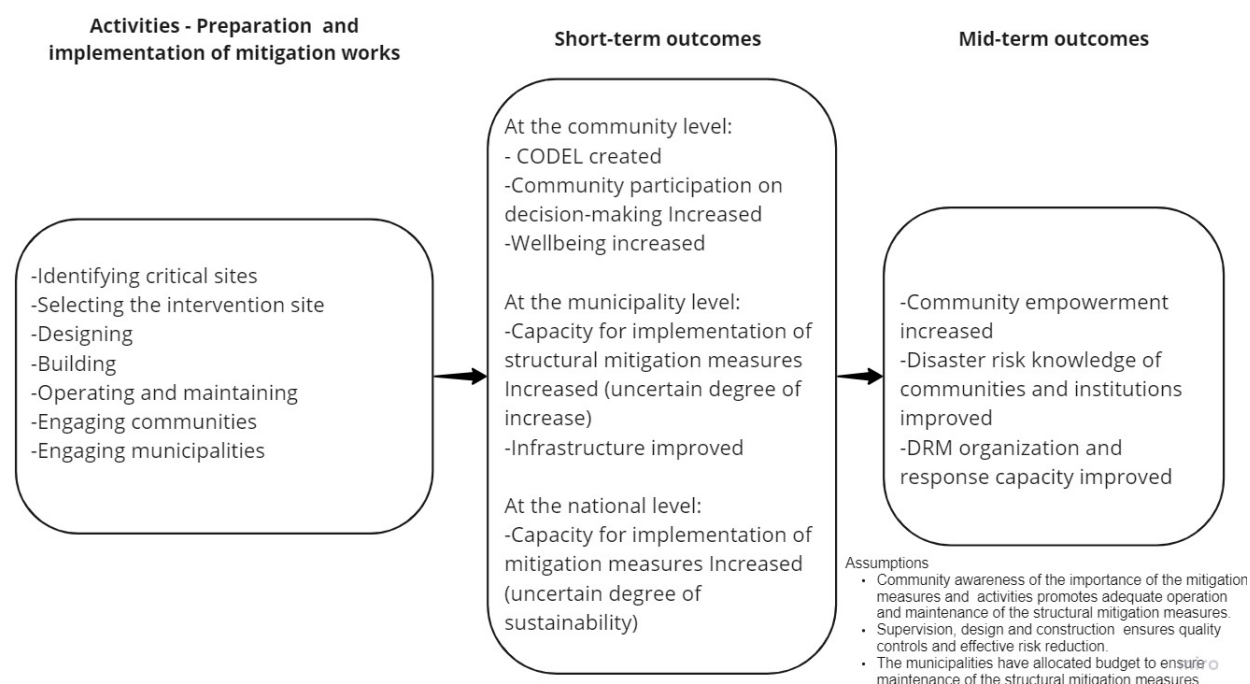
Source: Final Evaluation – Quantitative Evaluation (2020)

Outcome 3: Mitigation measures implemented

16. **The specific achievement of this outcome was measured through the** PDO-Level Indicator 5 (A percentage of a representative sample of mitigation measures financed by the Project evaluated independently as technically, economically, and environmentally satisfactory) and three intermediate results indicators. **All of them were achieved and most surpassed.** The evaluation of this outcome-focused its analysis on the impacts of implementing structural mitigation measures through the process set up by the PGRD. It was based on the PGRD Final Technical, Economic, and Environmental Evaluation and did not include site visits.

17. A **‘Theory of Change’** (ToC) explains how activities are understood to produce a series of results that contribute to achieving the final intended impacts. It can be developed for any level of intervention – an event, a project, a program, a policy, a strategy, or an organization. The ToC for the structural mitigation measures or works (see [Figure](#)) is based on the investigation of how these works produced changes in: i) community well-being and ii) national and local capacities to formulate, plan, and implement a structural mitigation work.

Figure 7. Theory of change implementation of structural mitigation measures



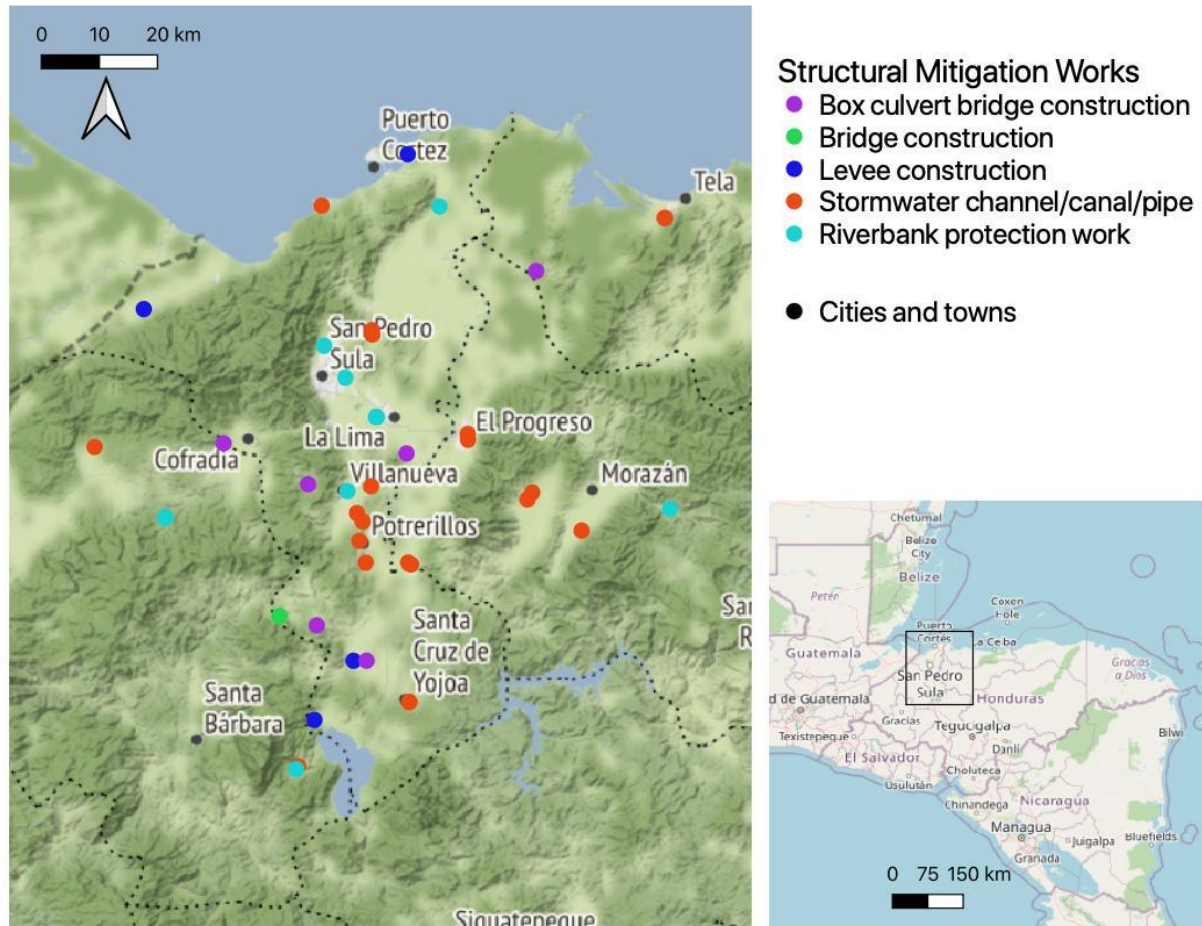
Source: Project Appraisal Document (PAD), Mid Term Evaluation Report (2017), Final Evaluation Reports (2020), and WB impact evaluation (2021)

18. Through the implementation of structural mitigation works, largely applying engineering techniques to achieve hazard-resistant and resilient structures or systems (i.e., small riverbank protection, drainage canal-bridges, and rainwater drainage), the PGRD aimed to reduce or avoid the possible impacts of hazards. The implementation process led to a **learning cycle that produced changes related to the improvement of the well-being of the communities located in the critical sites and the strengthening of capacities to plan and execute mitigation projects and to strengthen DRM.**
19. **The location of the structural mitigation works is shown in Figure 8. Forty (out of 40) structural mitigation works were implemented by the Project, reaching the target.** COPECO estimated that 283,793 (See Annex 6) people benefitted directly from the forty (Target 40) structural mitigation measures implemented, and an estimated 489,659 (See Annex 6) people indirectly (58% of total beneficiaries of the Project), with a temporal generation of employment of 4,571 people⁵⁰. Besides the 40 mitigation works, the PGRD – COPECO Final Evaluation Report indicates that two reinforcements were carried out⁵¹.

⁵⁰ PGRD – COPECO Final Evaluation Report (2020): page 37.

⁵¹ PGRD – COPECO Final Evaluation Report (2020): page 49. The reinforcement mitigation works correspond to: *Obras Complementarias al Colector de Aguas Pluviales para la Reducción del Riesgo en los Barrios El Calvario y El Centro del Municipio de Santa Cruz de Yojoa, Departamento de Cortés; and Obras Complementarias para el Reforzamiento del Canal de Aguas Pluviales para Reducción del Riesgo en la Col. Venecia.*

Figure 8. Location of structural mitigation works



Source of data: Structural mitigation works data provided in excel by the PGRD

20. **The structural mitigation works are grouped according to the construction period, as shown in Annex 6.** The 20 structural mitigation works and the reinforcing works built from 2013 to 2016 were assessed in the MTR. A significant improvement of the process of implementation of the works was suggested during the MTR, and 47 recommendations were made, addressing all the stages of implementation (preparation, environmental management, design, construction, and economic aspects). The 15 mitigation works built from 2017 to 2019 were assessed in the Final Evaluation⁵², and the remaining five mitigation works, plus one reinforcing work built in 2020, were assessed at the time of the ICR (July to August 2021), applying the same methodology as that of the COPECO- PGRD Final Report.
21. **The reinforcing works were carried out to solve problems in two mitigation works previously constructed by the Project.** The first reinforcement was carried out in 2016 due to the failure of the pipe system built as part of the Yojoa (Cortés) structural mitigation work carried out in 2014 (see Annex 6). During the site visits for the MTR, part of the pipe was being replaced by a canal⁵³. The canal built

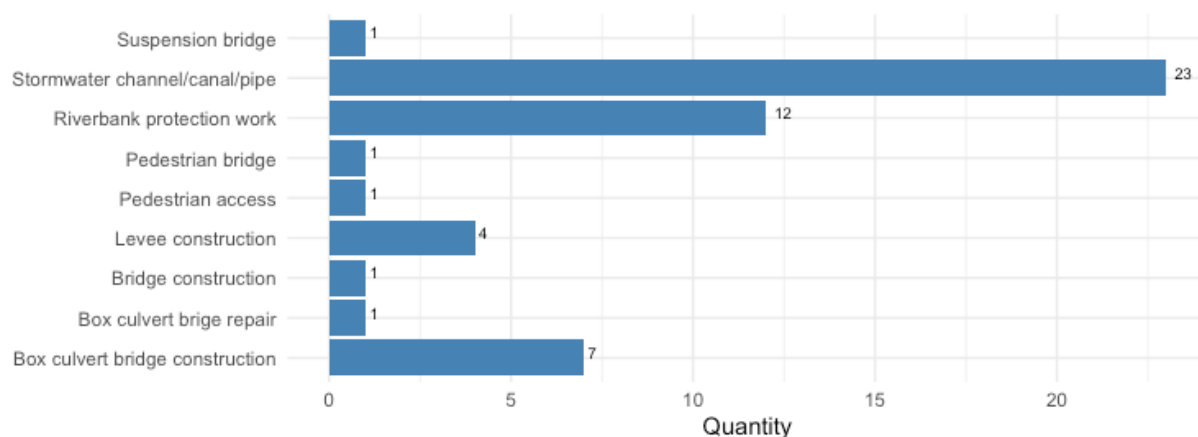
⁵² Final Evaluation - Technical, Economic and Environmental Assessment (2020)

⁵³ Recommendations on the Technical, Economic and Environmental Aspects of the Structural Mitigation Works Constructed by the PGRD – Honduras (2017): page 26

in Tela (Atlantida) in 2015 (see Annex 6) showed erosion problems affecting the canal's walls and producing slope instability. Scouring, deposition, and vegetation were also affecting the flow in the canal⁵⁴. Therefore, a gabion wall, revetment of the canal, and slope stabilization were built in 2020 (second reinforcement).

22. **The target number of structural mitigation works was forty (40). This number was achieved in February 2021, when the last structural mitigation works were handed over to the municipalities⁵⁵. The 40 works include stormwater channels/canals/pipes, box culvert bridges and small bridges, bridge repairs, riverbank protection works, and levees.** Some of these types of works may differ from what is commonly referred to as "flood mitigation works" —particularly in the construction of bridges— and are more related to the construction of road infrastructure and stormwater drainage infrastructure. However, these works are in line with the structural mitigation work concept and scope described in the PAD. Furthermore, lack of infrastructure, or infrastructure not meeting minimum standards, may be directly related to risk conditions. The quantity of structural mitigation works per type is shown in **Figure 2** (some structural mitigation works included more than one type of structure).

Figure 2. Structural mitigation works per type.



Source: Based on the description of mitigation works provided by the PGRD in excel format

23. **The Final Evaluation assessed 15 structural mitigation works by a methodology proposed by the PGRD⁵⁶, based on a scoring of economic, technical, and environmental criteria⁵⁷. Furthermore, twenty (20) structural mitigation works were also assessed for sustainability in the Final Evaluation. The methodology was aimed to provide the information for the PDO-level indicator 5 (Percentage of a representative sample of mitigation measures financed by the Project evaluated independently as technically, economically, and environmentally sound). This indicator was modified during the 2019 restructuring. It was initially intended to assess the works' economic, environmental, and technical "soundness". In the restructuring, it was changed to measure "satisfaction". The target of the indicator**

⁵⁴ Technical Memoir, Tela Atlantida (2019): page 5

⁵⁵ PGRD – COPECO Final Evaluation Report (2020): page 63

⁵⁶ The PGRD proposed the criteria and scoring system for the evaluation of the structural mitigation works. The methodology is part of the terms of reference of the Final Evaluation.

⁵⁷ A scale of five categories was developed where the category satisfactory is reached when the score is higher than 60.

was 90%, and 100% was achieved).

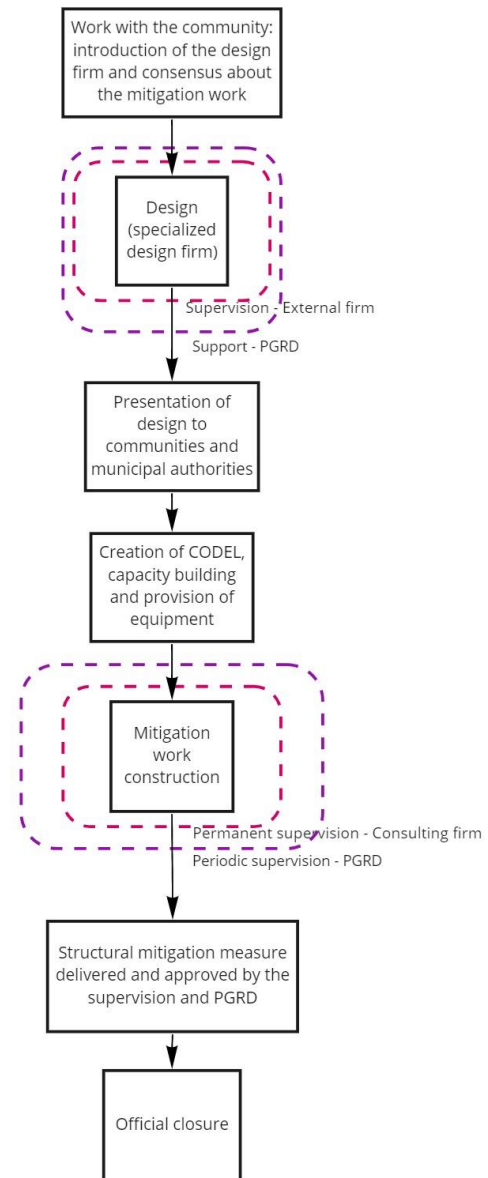
24. However, satisfaction at the technical, economic, and environmental levels is a subjective criterion that does not provide information about the impact of the structural mitigation measure and may obscure deficiencies in the design, construction, and operation of the structure. If the indicator's purpose is to assess the design and construction from a technical, economic, and environmental point of view, an interdisciplinary team that can carry out a detailed review of all aspects involved would be required. This type of assessment is not available. Nevertheless, the methodology to assess "satisfaction" was applied to the last five works built in 2020-2021 and to the reinforcement work (2020) to compare results as part of the ICR impact evaluation. In addition, a more in-depth analysis of the identified impacts of the structural mitigation works is carried out to complement the information that is provided by the Indicator.

25. In the following paragraphs, the process of implementing the mitigation works will be discussed, as well as information related to the Indicator, to understand the impacts of the activities.

26. **General process for implementing the mitigation works and its evolution.** The process to implement the mitigation works evolved as the PGRD progressed. In the first few years of the project, once the construction site was identified based on previous information generated by the PMDN⁵⁸ and participation of communities and Municipalities, each municipality presented the designs to be financed by the Project, which were reviewed then updated⁵⁹. During the MTR, several recommendations were made to improve the process, and from 2018 a new approach was implemented, which is shown in Error! Reference source not found. The designs of the mitigation works were carried out by a specialized firm and were supervised by an external firm with the support of the PIU-PGRD.

27. The positive impacts of implementing this process can be observed in the documentation of the structural measures constructed from 2018 onwards:

Figure 10. Process of implementation of structural mitigation measures since 2018, based on information from the PGRD Final Report (2021)



⁵⁸ Bank-financed Natural Disaster Mitigation Project (PMDN, P064913). PMDN was implemented between 2000 and 2010 at a total cost of US\$24.0 million, including two IDA Credits, several trust funds and government counterpart financing.

⁵⁹ PGRD – COPECO Final Evaluation Report (2020): page 37

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- a. Community participation was ensured from the beginning of the Project, not only through participation in the PMGRs but also in the early stages of the mitigation works. Community members were aware of the designs and provided opinions, and reached consensus (participation is documented through minutes of meetings).
 - b. Documentation of the process is organized in a dossier (the first recommendation made during MTR⁶⁰). The construction and supervision are documented in weekly reports and a final report. Information on quality control procedures can be found in these reports, as well as the follow-up on the progress and administrative tasks.
 - c. This impact analysis does not have the scope to review the quality of designs. However, the following conclusions can be drawn from the review of six design reports produced from 2018 onwards, which show that the Project considered the recommendations made during the MTR:
 - i. The reports improved significantly in terms of structure and contents. Sections on geology-geotechnics, hydrology-hydraulics, and structural design are clearly identifiable.
 - ii. The readability of the reports improved significantly.
 - iii. The contents of the technical sections improved, as well as the description of the methods and results.
 - iv. The geotechnical contents improved significantly compared to the reports produced before 2018, where the geotechnical component was often ignored in the documentation.
 - v. The design plans are of a much higher quality than those produced before 2018.
 - d. The implementation of the structural works was integrated with the local community committees (CODEL⁶¹). This strategy strengthens DRM at the local level and provides the basis for a more sustainable intervention. It is expected that by including communities in the process, appropriation of the mitigation works will be high, and therefore the chance they are maintained increases. Also, it is expected that transparency is ensured through the continuous overseeing of the implementation process by the beneficiaries.

28. **The process implemented in 2018 shows the strengthening of the technical capacities at the national and municipal levels, although to a lesser degree in the latter.** The capacity to formulate and manage a structural mitigation project increased significantly. As concluded by the Final Evaluation, there was a strengthening in capacities in all phases of a structural mitigation project, including: identification of the critical site, avoidance of protected areas, identification of location close to communities, document management, technical dossiers, meeting deadlines, supervision, material management, use of protective equipment, recycling, use of canvas-covered trucks/vehicles, avoidance of sediment discharges into water bodies, control erosion practices, verification of cultural patrimony, contingency plans and community grievances, community participation and conditions of the personnel working in the construction site. The Final Report by PGRD-COPECO indicates that the project also contributed to lessons learned in the field of environmental management through better practices in project management, follow-up of mitigation measures, and participative processes, as well as through the development of manuals and documents such as the booklet of climate change and the Good practice environmental code⁶². The Final Assessment indicates that a civil engineer was incorporated in the Municipality's personnel, which is an important step for maintenance and operation of the structural measures and increases the capacity of the Municipalities.

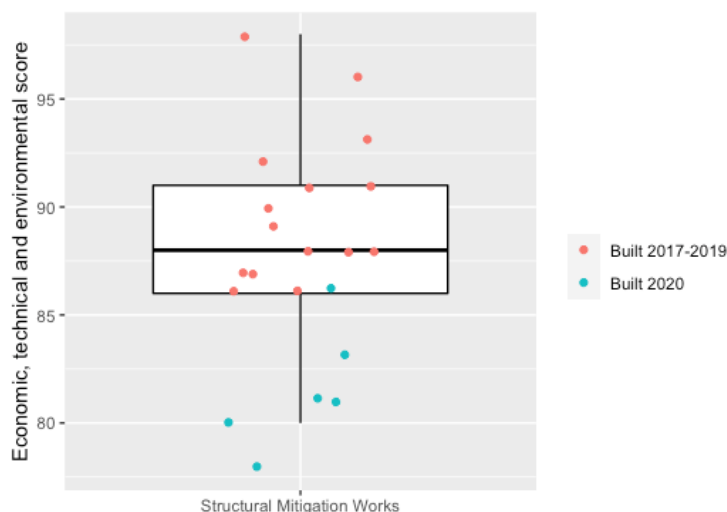
⁶⁰ Recommendations on the Technical, Economic and Environmental Aspects of the Structural Mitigation Works Constructed by the PGRD – Honduras (2017)

⁶¹ Local Emergency Committee, it is responsible for coordinating and executing actions aimed to prevention, mitigation and preparedness, response and rehabilitation and reconstruction due to emergencies and disasters in the community (<https://www.pgrd-copeco.gob.hn/wp-content/uploads/2018/11/Guia-Estructuras-Territoriales-muestra.pdf> page 51).

⁶² PGRD – COPECO Final Evaluation Report (2020), page 9

29. **However, the MTR highlighted the limited participation of the Municipalities in the construction and supervision activities and assurance of environmental controls, which may have continued after 2018 since no documentation by the Municipalities could be found during the review of the five structural mitigation works (2020-2021).** Therefore, the degree to which capacities to implement a project were strengthened at the municipal level is unknown. However, it is assumed that the lack of involvement of the Municipalities in the supervision of the works constructed after 2018 did not affect the supervision process since a firm was hired for that task.
30. **The scoring of economic, environmental, and technical criteria shows that the structural mitigation works constructed since 2017 are satisfactory, according to the PGRD's categories.** The methodology proposed by the PGRD to measure the level of economic, environmental, and technical satisfaction of the structural mitigation works specifies that a score higher than 60 points is satisfactory, and higher than 80 is highly satisfactory. The results of applying this methodology to structural measures built from 2017-2020 show that all these reach scores higher than 60 (see [Figure 3](#)). The PDO-level indicator 5 (Percentage of a representative sample of mitigation measures financed by the Project evaluated independently as technically, economically, and environmentally satisfactory) is, reported as 100% in the Final Report by the PGRD-COPECO. However, this assessment is based on the 20 mitigation works built from 2017 to 2020; also, it does not include the assessment of the five works built in 2020 and 2021.

Figure 3. Mitigation works scores built from 2017 to 2020



31. **In the case of the five mitigation works assessed as part of this impact evaluation, the sub-criteria that measure the Municipalities' participation, both in the supervision and in the environmental management, were the most frequently assessed with the lowest score.** This is due to the lack of evidence of the participation of the Municipalities. Furthermore, the criteria assessing the design (which is limited to assess if a characterization or identification of risk exists as the basis for the design) was assigned the intermediate score since the designs only include a qualitative identification of risk.
32. **Project preparation included the input of the Municipalities and local communities and was linked to the PMGRs.** The sites were selected according to the prioritization in the PMGRs, therefore reflecting the local knowledge and available risk information. However, improvement opportunities for future projects can be identified. The identification of critical sites is based on susceptibility information (mainly for floods and

landslides), historical records, and participative methodologies. Although these sources of information are very valuable, hazard analysis and a risk assessment integrated into the existing information could better inform decisions on the prioritization of critical sites. Hazard analysis in the Sula Valley is not an easy task and may require significant modeling efforts and resources to improve the scale of the available information. Some initiatives have been carried out after the Eta and Iota Tropical Cyclones⁶³ that could be capitalized and integrated into the analysis to identify critical sites.

33. **The rationale for needing a structural measure in a prioritized critical site was based on field observations and community input.** Although improvement opportunities exist with this approach, the rationale for the structural measures was included in the preparation documents. Examples of the rationale are shown in **Table 1**, where lack of infrastructure, and/or infrastructure not meeting minimum standards, are the most frequent reasons for the need for structural measures. From this rationale, it can be concluded that most of the structural mitigation works (stormwater canals/channels/pipes and bridges) responded to both risk reduction and infrastructure needs.

Table 1. Examples of the rationale for structural measures

Type of structure	Example of rationale
Box culvert bridge	• Interruption in the transit of people and vehicles during the rainy season⁶⁴ • Isolation of communities due to interruption of transit⁶⁵ • Accidents due to vehicles that are impacted by rocks or debris⁶⁶
Stormwater canals/channels/pipes	• Non-existing stormwater system⁶⁷ • Flooding during the rainy season⁶⁸ • No way out for the water; therefore, flooding occurs in the streets⁶⁹ • Collapsed stormwater system⁷⁰

34. **Although the documentation of the designs and content of the design reports improved significantly after 2018, there are still weaknesses.** Significant improvements were made to the content and quality of the design reports, and in the process to carry out the designs (with a specialized firm under the supervision of another firm) that can set the standard for future projects to be replicated not only by COPECO but other institutions. However, aspects such as the analysis of risk scenarios, the selection of a target risk scenario for risk reduction, and estimation of the benefits should be revised and improved in future projects.

A risk scenario analysis for the design of structural mitigation measures continues to be the weakest aspect of the design of the structural measures even after the improvements made after the MTR. The analysis was limited to field observations and a description of the general aspects of the area according to the information that the communities or municipal authorities provided⁷¹ (see report on the assessment of the five mitigation measures). Understanding hazard, vulnerability, and risk conditions are key for designing

⁶³ See those reported in BID, 2020: *Estimación de daños en zonas urbanas por los pasos de las tormentas: ETA-IOTA por Honduras*.

⁶⁴ *Descriptive Memoir San Antonio de Cortés, Cortés* page 5

⁶⁵ *Descriptive Memoir San Antonio de Cortés, Cortés* page 5

⁶⁶ *Descriptive Memoir San Antonio de Cortés, Cortés* page 10

⁶⁷ *Descriptive Memoir Puerto Cortés, Cortés* page 9; *Descriptive Memoir El Negrito, Yoro* page 21

⁶⁸ *Descriptive Memoir Puerto Cortés, Cortés* page 9

⁶⁹ *Descriptive Memoir Puerto Cortés, Cortés* page 9

⁷⁰ *Descriptive Memoir Santa Rita, Yoro* page 10

⁷¹ See for example: Socio Environmental Management Report *San Antonio de Cortés*, page 2

mitigation measures. The design documentation does not show a minimum level of analysis of the hazard, vulnerability, and risk conditions. The designs are limited to modeling a design scenario without investigating the hazard conditions or including comprehensive vulnerability information (see

35. **Box 1** for an example).

Box 1. Example of risk information provided by the preparation documents and design reports

For example, the information found in the documentation of the structural mitigation work “Construction of embankment and canalization of pluvial water in the neighborhood La Esperanza and Nuevos Horizontes to reduce risk in the southern sector of the Municipality of Puerto Cortes, Cortes Department”⁷² is shown below. The document presents a description of the current situation of the site and a short description of the hazard source according to the field visit and initial information.

Figure 42. Description of hazard source and site situation extracted from descriptive memoir

Current situation of the site	• During the rainy season, there are reports of flooding in the zone due to non-favorable slopes; also, when the tide rises, the level in the lagoon rises, and therefore there are flooding problems. • The sector does not have a sewerage system • The sector does not have paved roads • The sector does not have electricity • There are wooden houses • There are areas with small lagoons
Source of hazard	The water comes from the upper part of the mountains and hits the community at the same time the slope is very bad; furthermore, there is no adequate discharge.

The design report refers to the situation of the site with a general description of the flooding issues. However, no comprehensive hazard and vulnerability analyses were carried out. Therefore, the risk scenario is limited to the identification of a problem. The content of the previous section is as follows (translated):

“In the southern section of the Puerto Cortes city, there is an acute surface drainage problem. The urban zone has developed along the shore of the Alvarado lagoon; on the other hand, it is also limited with low zones, permanently flooded with variable flood depths between centimeters to meters. The low areas are limited with hills. During the rainy season, the water level increases, and the surface runoff drains naturally to the lagoon; when it reaches the houses and roads, the runoff floods the zone causing damage to properties and contents.

The problem to solve is protecting the community against flooding, the water level of the swamp zone rises and since it does not have an exit, the discharge time to the water body is large.”

⁷² Construction of Embankment and Canalization of Pluvial Water in La Esperanza and Nuevo Horizontes Neighborhood to Reduce Risk in the Southern Sector of the Puerto Cortés Municipality (*Construcción de Terraplén y Canalización de Aguas Pluviales en la colonia La Esperanza y Nuevos Horizontes para Reducir el riesgo del Sector Sur del municipio de Puerto Cortés, Departamento de Cortés*)

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36. **The lack of a detailed risk analysis prevents the quantification of benefits in terms of avoided damage and a clear understanding of the design scenario selection.** The feasibility of structural measures in an integrated flood risk management framework should include a clear understanding of risk to inform the choice of design scenario. Structures such as stormwater systems and bridges commonly follow standards of design (manuals or normativity) that specify the probability of exceedance of the design scenario. Despite referring to *Volume 6 of the Soptravi Road Manual*⁷³, the design reports produced in PGRD after 2018 show design scenarios that are different from those in the Manual without a clear explanation (see **Box 2** as an example). In the case of waterbody interventions, the choice of the probability of exceedance for the design scenario is unclear, and there is ambiguity in the concept of a waterbody intervention. For instance, some projects are named “canalization of pluvial water” that include waterbody interventions. Therefore, they imply runoff drainage and interventions to waterbodies that may require additional considerations to those provided by the Soptravi Manual (e.g., the implementation of the Jocomico creek⁷⁴).

Box 2. Example of return periods (inverse of annual probability of exceedance) used in the structural mitigation measures

- **Canalizations:** the design reports of the projects carried out in Choloma and El Negrito⁷⁵ mention that according to Volume 6 of Soptravi (Road Manual-Drainage and Bridges), the return period is 5 to 10 years; however, the financial analysis was carried out for return periods of 10 and 25 years, without an explanation of the choice of design criteria.
- **Levees:** for the levee proposed in Puerto Cortés in the project “*Construcción de Terraplén y Canalización de Aguas Pluviales en la colonia La Esperanza y Nuevos Horizontes para Reducir el riesgo del Sector Sur del municipio de Puerto Cortés, Departamento de Cortés*” a 10 year return period was used. The report does not explain why this return period was chosen; it only mentions that “it is satisfactory”⁷⁶. However, in the maintenance plan the builder recommends raising the filling of the levee to reach a protection for a 25-year return period.

37. **A waterbody intervention requires an integrated approach to flood risk management that not only considers conveying water from one point to another but comprehensively addresses the watershed. Integrity in the structural mitigation measures seems to be missing in the PGRD.** This is particularly noticeable in the interventions in creeks where problems were observed only locally without considering a watershed scale analysis nor complementary measures (see **Box 3** as an example).

⁷³ The Soptravi Road Manual provides guidance on the design scenarios (return periods/probability of exceedance) of bridges and drainage.

⁷⁴ In the case of the Project in El Negrito Yoro, the technical memoir explains that the project corresponds to the design of a canal (collector) that will intercept the flow of the Jocomico Creek and small drainage areas along the boulevard at the entrance of the city and will convey them to the canal in construction that goes parallel to the paved highroad that discharges into the Paté Creek.

⁷⁵ *Technical Memoir I Choloma, Cortés* page 10 ; *Technical Memoir I El Negrito, Yoro* page 46

⁷⁶ *Technical Memoir I Puerto Cortés, Cortés* page 68.

Box 3. Example of conceptualization of a creek intervention

In the intervention in the Jocomico Creek, El Negrito Yoro, the hazard was identified as the “non-existence of a canal system, so the water was flowing through the natural channel” (i.e., The hazard was identified as the creek using its natural space and flooding the urban area and the “solution” was canalization). According to the design report, sediment transport is an issue since large loads of sediment are transported by the creek and deposited in the urban area during floods (see **Photo 1** and **Photo 2** for flooding and sediment deposits after hurricanes Eta and Iota). Since the problem was conceptualized and treated locally, integrated watershed measures were not considered, which may impact flood risk and the sediment load in the urban area.



Photo 1. Flooding caused by Hurricanes Eta and Iota in the Project Area. Source: Canalización de Aguas Pluviales de la Colonia Rosario Nuñez para Reducir el riesgo de la quebrada Jocomico del municipio de El Negrito



Photo 2. Sediment deposit after Hurricanes Eta and Iota in the Project Area. Source: Canalización de Aguas Pluviales de la Colonia Rosario Nuñez para Reducir el riesgo de la quebrada Jocomico del municipio de El Negrito

38. **The mitigation works were planned as localized interventions, as described by the PAD, which creates a significant limitation in the case of flood risk since flood risk management requires integrated approaches.** Small infrastructure works such as bridges are less demanding in terms of integration to flood risk and water management. However, interventions such as levees do require an integrated vision as they modify the behavior of the water bodies during floods, making it important to review aspects such as their influence in the increase or creation of risk elsewhere. For example, in the levee constructed as part of the project “*Construcción de Terraplén y Canalización de Aguas Pluviales en la colonia La Esperanza y Nuevos Horizontes para Reducir el riesgo del Sector Sur del municipio de Puerto Cortés, Departamento de Cortés*” the mitigation work improved the flood risk conditions for some of the inhabitants in the area, but the risk condition of those located to the east of the levee was not improved⁷⁷.
39. **The feasibility of mitigation measures reaching acceptable risk levels was not considered when assessing the alternatives of intervention.** This aspect particularly applies to waterbody interventions. When analyzing alternatives, the comparison of cost/benefit and environmental and social conditions is key, so a decision on the feasibility and preferability of a measure or a group of integrated measures (as is normally approached by flood risk management) is identified. The preparation documents from 2020 that were reviewed present a short introduction of the problem, hazard conditions, and proposal for intervention with a structural measure without analyzing if there are factors that prevent or limit effective mitigation or make mitigation environmentally or socially unfeasible (see **Box 4** for an example).

⁷⁷ Technical Memoir I Puerto Cortés, Cortés pag 8

Box 4. Example of a site where the proximity of houses limits the structural intervention

In the mitigation work “*Second stage of canalization of pluvial waters in the Southern sector of the neighborhood, Lopez Arellano for risk reduction in the canal of Carmen lagoon,*” the site description indicates that the capacity of the channel is limited by several houses “almost” inside of the channel. The possible mitigation work identified in the preparation documents is a wall; however, nothing is explained about what measures should be taken for the houses “almost” inside the channel. The design report⁷⁸ indicates that the existing channel had already shown erosion and damaged the foundations of houses constructed inside the channel.



Photo 3. Houses in the channel of the waterbody of the Project Area. Source: Memoria Descriptiva Choloma, Cortés



Photo 4. Houses in the channel of the waterbody of the Project Area. Source: PGA Choloma, Cortés



Figure 5. Render of the designed canal. Source: design report

The proposal in the design report is shown in **Figure 5**. The report also explains that the width of the canalization is the maximum possible, stretching to the limit of the properties and keeping a strip of 50 cm⁷⁹. The report of the Environmental Management Plan⁸⁰ indicates that a resettlement process started in the Colonia Juan Orlando Hernández with five signed resettlement agreements, but no explanation on how this resettlement integrates with the mitigation work was found. Also, no explanation was found about the sewerage system of the houses in the project area.

From the explanation above, it seems that the project was designed to transform the waterbody into a canal to fit the space left by the properties constructed almost inside the channel. From a flood risk management perspective, this creates a series of limitations since hazard scenarios that exceed the design scenario will affect the houses, and the rapid discharge due to canalization may have impacts somewhere else downstream. In addition, the General Water Law⁸¹ defines a strip for circulation and public use for rivers and creeks of 5m, and it is not clear how these restrictions were considered in the design.

40. Climate change and ecosystem-based approaches/nature-based solutions were not considered for the structural mitigation works. The design process did not consider climate change at any complexity level (approaches may vary from simple to very complex). Furthermore, although mentioned in the PAD, ecosystem-based approaches were not considered, and all interventions were grey/hard structures. These approaches are very important in climate change adaptation, resilience, and sustainability in water bodies and stormwater systems intervention. In the latter, Sustainable Drainage Systems (SuDS) concept is key for climate change adaptation and resilience. This was a missed opportunity in the PGRD to initiate a change in the conceptualization of flood risk management from hard structures to green/hybrid and into infrastructure resilience. This should be considered for future projects.

⁷⁸ Technical Memoir Choloma Cortés page 6

⁷⁹ Technical Memoir Choloma Cortés page 78

⁸⁰ PGA report page 5

⁸¹ Decree No 181-2009 Gaceta No 32088 14 of December 2009 General Water Law, page 17
https://www.gwp.org/globalassets/global/gwp-cam_files/ley-general-de-aguas-2009.pdf

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41. Integrated flood management calls for adopting the best mix of structural and non-structural measures. It is not fully clear how an integrated combination of structural and non-structural measures was planned in the critical sites, however significant efforts in strengthening the community organization for DRM can be identified. An isolated flood management option may achieve a limited objective, e.g., protection of a certain area, but may fail to address other objectives that may also need to be addressed at the watershed level. Non-structural measures serve as an important complement to the structural measures, and usually, they may reduce not only the catastrophic consequences of flood risks but also adverse impacts on the environment⁸². Although no information about flood risk management in the critical sites was found in the documentation, nor an indication of how residual risks are handled, a strong interrelation of the mitigation works with the institutional organization and response capacity was identified since CODELS were implemented as part of the process of implementing the mitigation works⁸³.
42. From 2018, the Supervision firm followed up on environmental control measures, good socio-environmental practices, and a report of the environmental management plan was produced for the mitigation works. This report compiles all the environmental information of the work, from the site selection to the finalization. The implementation of the procedure shown in Figure 10 in 2018 meant a significant change in the documentation of the environmental management and the assurance of fulfillment of environmental controls. The implemented changes respond well to the recommendations made in the MTR.
43. The participation of the Municipalities in the supervision of the mitigation works and the assurance of fulfillment of environmental controls was one of the weaknesses identified during the MTR. Although the activities the Municipalities were initially in charge of were transferred to the Supervision firm, continued participation was still expected. However, no evidence was found of their involvement. According to the Environmental Plan Reports for structural mitigation works after 2018, the Municipal Environmental Unit (*Unidad Municipal del Ambiente - UMA*) oversaw watching and monitoring the fulfillment of the environmental measures issued by MiAmbiente, doing weekly visits, filling out the environmental control forms, and sending them to PGRD- COPECO. These tasks seem to be shared with the Supervision firm that also had to follow up on the fulfillment of the environmental measures and report to the PGRD-COPECO. The reports indicate that the forms were filled out by the Supervision firm as part of the weekly report with evidence of the fulfillment of the environmental measures. However, no documentation by the Municipality was found to show their engagement, although the reports mention that they participated.
44. The technical, economic, and environmental assessment of the mitigation works carried out for the Final Evaluation and for the ICR concluded that most of the works have a low cost/complexity to moderate cost/complexity for maintenance and operation⁸⁴. Furthermore, the final assessment identified that in the Municipal Inversion Plan (*Plan de Inversión Municipal - PIM*), the planning of mitigation works is being included, as well as maintenance of mitigation works. Although issues to maintain the structural mitigation works exist and more may arise in the future, the Project made efforts to raise awareness in the communities and the local authorities on the importance of maintenance (a maintenance manual was prepared, and the creation of CODELS was integrated into the implementation process). According to the Final Evaluation, 19 out of 20 assessed mitigation works (built from 2017-2019) were considered to show minor/natural deterioration (category A according to categories assigned by the consultant, see Figure 6).

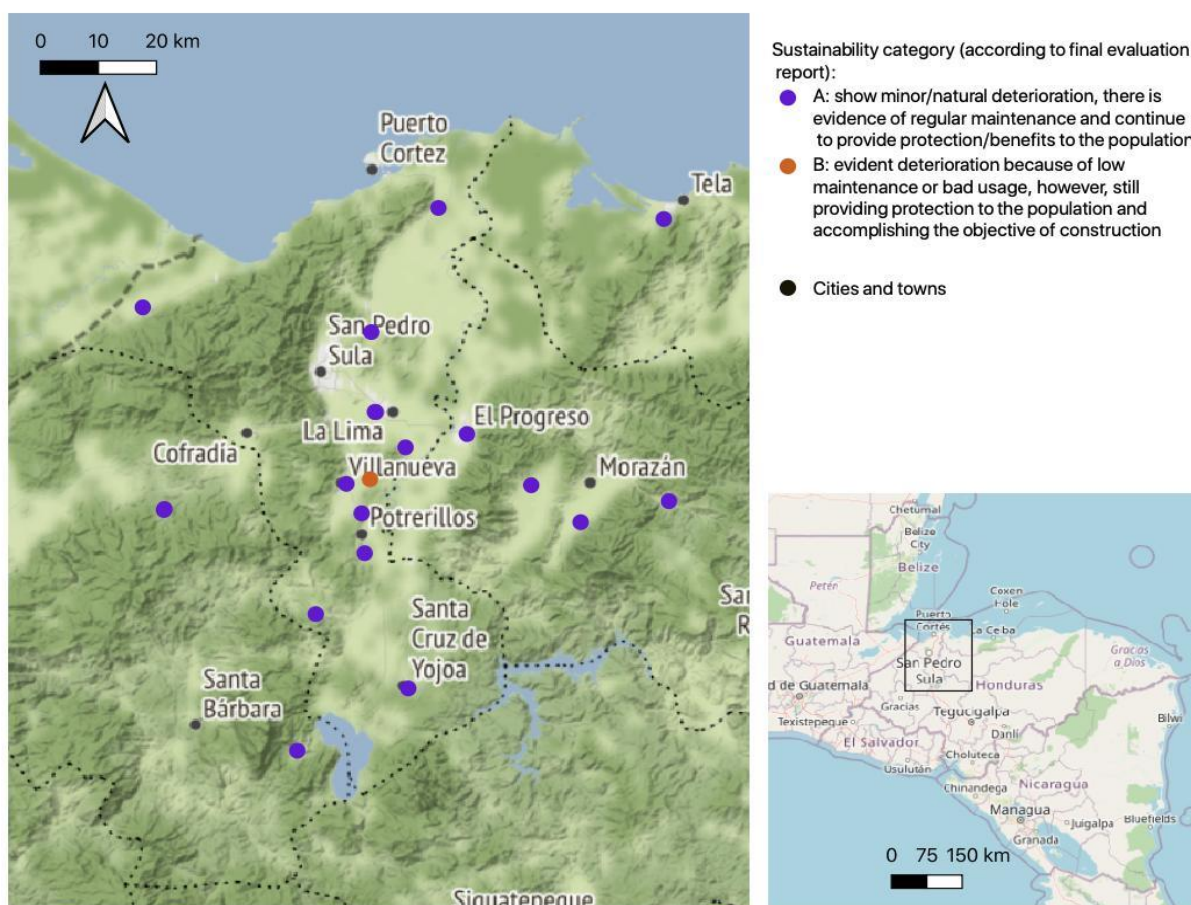
⁸² WMO, 2007: Applying Environmental Assessment for Flood Management. 33.

⁸³ PGRD – COPECO Final Evaluation Report (2020) page 37

⁸⁴ Final Evaluation - Technical, Economic and Environmental Assessment (2020), page 25

Only one mitigation work was identified with evident deterioration⁸⁵. However, future sustainability and maintenance will depend on political will and available budget. Furthermore, beneficiaries have indicated during interviews that the frequency of maintenance may not be enough and that more commitment from the municipal authorities may be needed⁸⁶.

Figure 6. Sustainability assessment



Source: Final Evaluation – Economic and Environmental Assessment (2020)

45. The technical, economic, and environmental assessment (2020) of the mitigation works concluded that the cost of the works is in acceptable ranges regarding materials, labor, and machinery⁸⁷. Most of the mitigation works had increments in cost during construction. According to the technical, economic, and environmental assessment, these increments occurred in response to improvements in social, technical and/or environmental aspects of the works and were in line with the real needs of the sites and their communities⁸⁸.
46. The mitigation works constitute the Project's main benefit, as identified by the communities that indicated that these reflect their needs and provide a high degree of satisfaction. According to the 2012-2021 Final

⁸⁵ Final Evaluation - Technical, Economic and Environmental Assessment (2020), page 12

⁸⁶ SINTRATEL community interviews and ICR interviews (2021).

⁸⁷ Final Evaluation - Technical, Economic and Environmental Assessment (2020) page 25

⁸⁸ Final Evaluation - Technical, Economic and Environmental Assessment (2020), page 25

Report by the PGRD, 97% of sampled beneficiaries reportedly satisfied with COPECO's DRM activities (achieving 114% of the target), with 97% satisfaction from the female sample (achieving 114% of the target). Furthermore, the 2020 Final Evaluation indicates that the perception of the degree of accomplishment of the objective of risk reduction is mostly “very high” (48.4%) and “high” (33.42%). It is also important to highlight that the process to implement the structural mitigation measures involved the communities and socialized all the implementation processes of the mitigation works. The 2020 final assessment found that 79% of the direct beneficiaries consider the accomplishment and satisfaction of the mitigation works in combination with the capacity building to communities as very high or high. 52% at baseline, 62% at MTR, and 54% at the final assessment, of the representatives of interviewed institutions, consider that the mitigation works correspond with the needs of communities. The level of accomplishment and satisfaction of the mitigation works for institutional representatives reached 54% in the very high category and 24% in the high category at the final assessment time.

47. The project implemented 55 non-structural measures, significantly exceeding the target of 20. These include: i) workshops for municipal personnel addressing climate change, gender, DRM, waste management, vetiver grass planting, Indigenous Peoples plans, geographic information systems (GIS), watershed management and resettlement; ii) films on DRM; iii) workshops for journalists; iv) training workshops for the CODELs and CODEMs on DRM and damage assessment; v) watershed management plans (La Pita-Las Palamas and the Molombo river); vi) booklets and manuals (Informative Booklet on Climate Change with DRM and Gender Approach, Good practice environmental code for DRM, Operational Manual of the Honduran Builder with a DRM approach; vii) guidelines (Methodological Guidelines of DRM for teachers, Guide for the Organization of CODELs and CODEMs); viii) a radio soap opera on DRM; ix) short DRM films; and x) DRM video clips. Thirteen Indigenous Peoples and Afro-Honduran communities hazard atlases were developed and socialized to the Garifuna and Tolupan communities.
48. The fourth restructuring project carried out in June 2020 extended the closing date of the project from June 30, 2020, to December 31, 2020. The extension was justified on the need to complete five mitigation works and other project activities which were impacted by the nationwide curfew established by the Government since mid-March 2020 to prevent the spread of the COVID-19 pandemic. At the time of the restructuring, 35 mitigation works of the target of 40 had been delivered. A fifth restructuring extended the closing date from December 31, 2020, to June 30, 2021, to allow the completion of three works financed under the project that suffered delays. Although the extensions of the project were significant, the rationale for extension is understandable since social distancing and work restriction measures due to the COVID-19 pandemic affected the estimated progress of the works, and Eta and Iota affected the accessibility to three construction sites.

Outcome 4: Government capacity to respond promptly and effectively to an eligible emergency improved

49. The CERC was activated twice during Project implementation, once for the COVID-19 pandemic (June 2020) and the second time to respond to Tropical Cyclones Eta and Iota (May 2021). The Project successfully improved the Government's capacity to respond promptly and effectively to an emergency, as measured by PDO Indicator 6 (Time taken to disburse funds requested by the Government for an eligible emergency). In both cases, it took three weeks to access the funds, which was quicker than the four-week targets.

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50. With the CERC activation for COVID-19, an Emergency Action Plan (EAP) was implemented for the refurbishment of twelve (12) centers (International Sanitary Offices and Mass Attention Units) to support the COVID-19 emergency. Therefore, 12 Centers were prioritized out of the 8 planned (meeting 150% of the target of the 5.2 intermediate indicator). However, 90% of the centers were flooded during Tropical Cyclone Eta and Iota. In May 2021, a new activation of the CERC refocused the available funds on responding to the damages caused by the Tropical Cyclones. A new EAP for the Tropical Cyclone response was developed and focused on the purchasing of the following equipment and services: transport for COPECO, computer equipment, early warning system equipment, a hydrological study, and geologist and remote sensing specialists.
 51. It should be noted that the government's capacity to respond to emergencies was also improved through the institutional strengthening activities of the Project, shown in Component 2 (See the Theory of Change). In the project impact evaluation and the surveys undertaken as part of this ICR, respondents confirmed that PGRD had improved the response capacity of COPECO at the municipal and local levels.

Conclusions

1. **The targets of all the indicators were achieved, and most of them were surpassed.** The Project had a strong focus on community participation and social inclusion, reflected in the number of beneficiaries, of which 52% were women. The Project reached a large number of beneficiaries through the implementation of structural and non-structural mitigation measures, including a significant amount of community participation activities. Community participation and citizen engagement are the foundation for inclusive DRM⁸⁹, and it is expected that these activities have a short- and long-term impact, if sustained, in the DRM local capacity.
2. **National-level DRM capacities were strengthened through several actions:** The development of a methodology for territorial planning with a risk management approach and the strengthening of CENAOS and hazard monitoring in Honduras mark important steps forward in DRM. A standard methodology for territorial planning constitutes a starting point from which the institutions could advance jointly in the construction of planning instruments. However, territorial planning that incorporates DRM has very demanding requirements for effective implementation (e.g., sufficient capacities, detailed risk information, legal framework, political will, community engagement, among others), and continued strengthening of national and local capacities will be important. The strengthening of CENAOS and hazard monitoring have a very high impact in building the capacities of the country in hazard knowledge and early warning, and it is expected that capacity building, better equipment, and new offices for CENAOS have strengthened the national DRM capacity.
3. **Capacities at the Municipal and Community levels were improved** through the creation, organization, and training of Local Committees for Emergency Response; capacity building for communities and municipal personnel; studies for characterization and territorial planning; preparation of Municipal Risk Management Plans, Municipal Emergency Plans and Municipal Land Use Plan; creation of a geoportal; and strengthening of CBEWS. In particular, the creation, organization, and training of the CODELs and CODEMs, linked to the implementation of structural mitigation measures, had a high impact on DRM response capacity and empowerment of communities, as well as to contribute to the sustainability of the structural mitigation works.

⁸⁹ Inclusive Disaster Risk Management & Gender Equality (<https://www.gfdrr.org/en/inclusive-drm>)

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4. **High impact planning instruments were developed and adopted.** Municipal Risk Management Plans and Municipal Emergency Plans were adopted by 18 (target 16) municipalities. These instruments provide a framework for building resilience at the local level.
 5. **The perception of satisfaction of beneficiaries on the structural mitigation works is high.** The interviewed beneficiaries (97%) perceive that the structural mitigation works respond to their needs. Most of the structural mitigation works responded to both risk reduction and infrastructure needs. Since the areas of intervention suffer from a lack of infrastructure and frequent flooding, structures such as bridges and stormwater canals produce a high positive impact on the wellbeing of communities.
 6. **The capacity for project management improved significantly.** After the MTR, the process for implementing the structural mitigation measures was improved, incorporating the **supervision** of design and construction by a specialized firm. The documentation of the design and construction process of each structural mitigation work also improved dramatically, showing that the PGRD considered most of the recommendations made during the MTR. If systematized and disseminated, these capacities can have an impact at the National and Local levels.
 7. **Although the structural mitigation works lack an integrated flood risk management approach nor take into consideration climate change and ecosystems-based/nature-based solutions, they provide risk reduction for their design scenarios⁹⁰.** However, under conditions that exceed those of the design scenarios, flooding will occur. It is important to complement the structural measures with nonstructural measures in an articulated and effective way and to clearly explain the limitations of structural measures to the communities to avoid a false sense of security⁹¹.
 8. **Given the high level of involvement of the communities, it is expected that the sense of ownership and appropriation of the structural mitigation measures is high. Therefore, the probability of providing maintenance increases (due to the lack of maintenance by municipalities). However, sustainability will also depend on political will and the availability of resources.**
 9. **Given the strong focus on capacity building, development of instruments, and implementation of risk management measures, it is expected that the livability, sustainability and/or management of cities benefited by the Project improve.** However, the degree of improvement is difficult to determine from some indicators. For example, in terms of risk reduction, few measurable targets were set (e.g., reduction of annualized flood damage or people whose risk level was reduced).

⁹⁰ This conclusion is made under the assumption that the design, construction, maintenance, and operation are carried out appropriately. If this is not the case, risk reduction can be compromised.

⁹¹ Overconfidence in flood protection can cause undesirable side-effects. This is so because people living in areas protected by embankments have a false sense of safety, which result in the underestimation of the flood risk and limited preparatory measures. *Lechowska (2018) What determines flood risk perception? A review of factors of flood risk perception and relations between its basic elements.*

ANNEX 6. STRUCTURAL MITIGATION MEASURES IMPLEMENTED BY PGRD

No.	Name of the structural mitigation measure	Year of construction	Cost (In US \$)	Direct Beneficiaries	Indirect Beneficiaries
1	Canalization of pluvial water and pedestrian access to reduce vulnerability in the Monte Fresco neighborhood, Colonia Orellana Sector, municipality of Las Vegas department of Santa Barbara	2013	90,594	695	3,617
2	Construction of box culvert bridge to canalize pluvial water and reduce vulnerability in El Porvenir village, municipality of San Manuel department of Cortes	2013	101,198	8,024	15,000
3	Construction of box culvert bridge to reduce vulnerability in La Tigra Creek in the Municipality of San Antonio in the department of Cortes	2013	61,792	1,953	7,382
4	Canalization of pluvial water to reduce vulnerability in the Suyapa neighborhood, street to the La Venta village, Municipality of Pimienta Cortes department	2013	82,909	450	15,000
5	Canalization of pluvial water to reduce vulnerability in the El Nuevo Higuerito Central community, municipality of Potrerillos department of Cortes	2013	100,604	980	150
6	Canalization of pluvial water to reduce risk in the Barrio Abajo neighborhood, municipality of El Negrito department of Yoro	2014	189,105	485	18,000
7	Construction of stormwater pipe to reduce risk in the San Juan-Rio Pelo neighborhood and nearby areas in the municipality of El Progreso, department of Yoro	2014	256,409	14,387	200,000
8	Construction of gabion wall to reduce risk in the left riverbank of the Cacaupala river and the Pueblo Nuevo neighborhood of the municipality of Petoa, department of Santa Barbara	2014	171,464	895	10,231
9	Protection of the left riverbank of the Santa Cruz creek to reduce risk in the Cuyamapa village, municipality of Morazan, department of Yoro	2014	187,255	815	-
10	Protection of the left levee, El Zapote sector, Guaruma I, to reduce risk from the Chamelecon river, municipality of La Lima, department of Cortes	2014	208,984	50,000	20,000
11	<i>Construction of stormwater pipe to reduce risk in the El Calvario and El Centro neighborhoods of the municipality of Santa Cruz de Yojoa, department of Cortes</i>	<i>2014</i>	<i>225,067</i>	<i>1,250</i>	<i>5,000</i>
12	STAGE II- Protection of the left levee in El Zapote sector to reduce risk from the Chamelecon river in the municipality of La Lima, department of Cortes	2015	194,134	50,000	20,000
13	Construction of levee on the left riverbank of the San Idelfonso river to reduce risk in the Potrerillos village, municipality of Omoa, department of Cortes	2015	189,882	4,500	2,500
14	Protection of the right riverbank of the metallic bridge on the Chamelecon river to reduce risk in the Baracoa village municipality of Puerto Cortes, department of Cortes	2015	187,029	50,810	50810

No.	Name of the structural mitigation measure	Year of construction	Cost (In US \$)	Direct Beneficiaries	Indirect Beneficiaries
15	Canalization of pluvial water and protection of the left riverbank of the El Carmen lagoon to reduce risk in the Valle de Sula neighborhood, in the municipality of Choloma, department of Cortes	2015	235,554	38,395	38395
16	<i>Canalization of pluvial water to reduce risk in the Venecia neighborhood in the municipality of Tela, department of Atlántida</i>	2015	244,535	1,216	1,986
17	Protection of banks of the stormwater canal and repairing of box culvert bridge to reduce risk in the La Independencia neighborhood, municipality of Villanueva, department of Cortes	2016	192,963	1,800	1,200
18	STAGE II: Construction of gabion wall to reduce risk in the left floodplain of the Cacaupala river and the Pueblo Nuevo village, municipality of Petoa, department of Santa Barbara	2016	161,271	1,204	10,231
19	Canalization of pluvial water to reduce risk in the El Plan village, municipality of San Manuel, department of Cortes	2016	234,436	4,144	3,430
20	Canalization of pluvial water to reduce risk in the San Juan Camalote village of the municipality of Morazan, department of Yoro	2016	168,799	571	344
	<i>Complementary works of the stormwater pipe to reduce risk in the El Calvario and El Centro neighborhoods municipality of Santa Cruz de Yojoa, department of Cortes</i>	2016	57,013		
21	Canalization of pluvial water in the north-east sector of the El Progreso city, municipality of El Progreso, department of Yoro	2017	233,886	523	1,904
22	Riverbank protection works in the Piedras Amarillas creek to reduce risk in the municipality of Las Vegas, department of Santa Barbara	2017	180,023	1,160	942
23	Canalization of pluvial water to reduce risk in the southern sector of the urban area of the municipality of Omoa, department of Cortes	2017	193,670	6,000	-
24	Construction of box culvert bridge on the Chasnigua creek in El Sauce community to reduce risk in the municipality of Villanueva department of Cortes	2018	162,506	2345	1870
25	Construction of box culvert bridge on the Naco river to reduce risk in the municipality of Quimistán department of Santa Barbara	2018	130,991	2655	4633
26	Canalization of pluvial water from the Callejas hill in the San Pablo neighborhood and construction of manhole in the Reparto Pedregal and Poder Ciudadano 1 neighborhoods to reduce risk in the municipality of Potrerillos department of Cortes	2018	301,154	3225	1500
27	Construction of levee on the left bank of the Helado river and hanging bridge to reduce risk in the Buenos Aires-La Jutosa village in the municipality Santa Cruz de Yojoa, Cortes	2018	342,996	3735	1182

No.	Name of the structural mitigation measure	Year of construction	Cost (In US \$)	Direct Beneficiaries	Indirect Beneficiaries
28	Canalization of pluvial water to reduce risk in the Lara, Independencia, and Subirana neighborhoods, in the municipality of Santa Rita, department of Yoro.	2018	314,556	3649	7300
29	Construction of levee on the left bank of the Chiquito river and canalization of pluvial water in La Paz neighborhood, in the municipality of San Francisco De Yojoa, Cortes	2018	122,728	1500	1000
30	Protection of right riverbank and construction of a pedestrian bridge on the El Sauce creek to reduce risk in Los Angeles neighborhood in the municipality of San Pedro Sula, department of Cortes	2019	316,977	1005	5098
31	Riverbank protection of the Intersindical creek to reduce risk in the SITRATELH neighborhood in the municipality of San Pedro Sula, department of Cortes	2019	273,161	1175	2214
32	Construction of box culvert bridge on the Toloa river to reduce risk in the Toloa community, municipality of Tela, department of Atlantida	2019	259,415	1500	2243
33	Box culvert bridge and left riverbank protection to reduce risk in the Belen neighborhood in the municipality of San Francisco de Yojoa, Cortes	2019	284,367	630	
34	Construction of stormwater pipe and box culvert bridge in the San Martin neighborhood in Pinalejo municipality of Quimistan, department of Santa Barbara	2019	390,391	1507	2000
35	Canalization of pluvial water in the Km 86 municipality of Pimienta, department of Cortes	2019	211,268	8000	1241
36	Construction of bridge on the La Cienega creek to reduce risk in the El Caulote community and Nueva Union	2020	547,602	3000	1400
37	Construction of embankment and canalization of pluvial water in La Esperanza and Nuevos Horizontes neighborhoods to reduce risk in the southern sector of the municipality of Puerto Cortes, department of Cortés	2020	418,361	900	5000
38	Second stage of the canalization of pluvial water in the southern sector of the Lopez Arellano neighborhood to reduce risk in the canal of the Carmen lagoon	2020	530,402	6871	20000
39	Canalization of pluvial water of the Rosario Nuñez neighborhood to reduce risk in the Jocomico creek municipality of El Negrito	2020	462,631	1200	6000
40	Canalization of pluvial water to reduce risk in the Municipal neighborhood municipality of Santa Rita, department of Yoro	2020	530,363	639	856
	<i>Complementary works to reinforce the pluvial water canal to reduce risk in the Venecia neighborhood</i>	2020	157,725		
TOTAL			9,906,170	283,793	489,659

Source: PFRD - COPECO Final Report (2021), page 28.

ANNEX 7. BORROWER COMMENTS

This document was translated into Spanish and sent to the Government of Honduras (GoH) for review on November 24, 2021. After a 20-day review period, no comments were submitted. The Bank communicated to the GoH that the report was deemed approved. All the documents utilized to carry out this ICR were prepared, validated, and provided by the GoH.

ANNEX 8. INTERVIEWS UNDERTAKEN AS PART OF ICR PREPARATION

In August 2021, the ICR Bank team interviewed: Beneficiaries and Government/PGRD/COPECO stakeholders. The topics addressed were: PGRD impact, project performance, preparation and implementation, coordination, gender equity, structural and nonstructural mitigation measures, and lessons learned. In summary, according to the information obtained from these interviews, the Project PDOs were achieved, despite the different socio-political processes and environmental events related to the disasters of the tropical storms Eta and Iota, the COVID-19 pandemic, the 2019 restructuring, and governmental financial approval delays, among others. Regarding project performance, according to the interviewees, the PGRD was satisfactory and was an excellent experience for Honduras and specifically for the Sula Valley, Region I, generating conditions for an efficient and effective response to natural disasters. In terms of coordination, it was good at all levels; particularly, it is worth mentioning the excellent work of advice and supervision of the WB team in all phases of the Project, as well as the coordination with COPECO, governments, and local organizations facilitated its efficient implementation. According to the interviewees, regarding the structural mitigation works, excellent perceptions were obtained on their efficiency in reducing lives losses and asset losses, such as housing and road infrastructure, in addition to the strengthening of COPECO's DRM technical capacities, derived from the Project's support.

The interviewees indicated that the objectives and indicators of the Project were achieved. One of the interviewees highlighted the improvement of the implementation process of the structural mitigation measures or works after the MTR, which was noticeable during the evaluation of the works for this ICR. Also, most of the interviewees considered that despite the very high institutional fragility, the Project contributed to strengthening the local and municipal capacity in DRM. Compared to Hurricane Mitch in 1998, the consequences of Tropical Cyclones Eta and Iota would have been much more significant if it had not been for the investment of PGRD in DRM community capacity building.

In addition, some mentioned that in a complex socio-political context, the PGRD strengthened the central role of COPECO in disaster response with a more inclusive work model. Regarding PGRD performance, although three project extensions were given, working in a context such as Honduras is difficult; however, the project performance was considered satisfactory. In relation to preparation and implementation, institutions still face challenges; therefore, strengthening civil capacities is important, as well as decentralizing institutions, to better respond to emergencies. However, it was better responded at the local level (response to ETA and IOTA), but it is necessary to strengthen more at the national level. The project's environmental management and occupational safety performance were satisfactory, gradually improving as the project progressed. However, before the MTR, supervision to the contractor companies was needed to generate greater capacities and better performance. The project suffered some understandable delays due to the complexity of its objectives. From the social perspective, reaching out to vulnerable groups, particularly Indigenous and Afro-Honduran Peoples, was difficult in the first years, but with important achievements starting in 2018. The project was implemented in the midst of deep political and institutional crises and violence, widespread in the Sula Valley. It is important to mention that the disappearance of SEPLAN and the internal conflicts during the government change significantly affected the project's implementation at its initial phase. In terms of coordination, it is considered that all the TTLs were very good at addressing their role, despite this difficult context and the reality of Honduras, compared to the Bank's requirements. But despite all the challenges, there was good coordination with the Bank. The project's coordination with the Bank was adequate; it allowed for close accompaniment that made it possible to achieve satisfactory performance due to the capacity and willingness of the PGRD-

COPECO specialists. Field visits and work meetings were held when necessary, and communications to and from the project were made in a timely manner. Although there were changes of managers and team members, there was closeness and agility in the coordination between both parties.

During implementation, the interviewees commented that the coordination between the Government and Bank was appropriate. The Bank was always informed and involved in analyzing and resolving problems. Regarding the structural mitigation measures, they considered that all had positive impacts on the population. For example, there was a municipality that was constantly flooded by a creek, and with a structural mitigation measure that the PGRD built, the population was very happy because the risk of flooding was reduced for the inhabitants of the area of influence. In general, the structural mitigation works, gave the expected impacts to the selected municipalities by the project, reflected on their assets, the physical integrity of the people and health of the community, are now less, in the case of events with rates of return considered in the design of the works. The works were accompanied by improvements in the environmental performance of the contractors. Also, they had a positive impact on the organization of the community through the creation of the CODELs.

Positive impacts: quality works with rigorous design and inspection processes. Positive in terms of: (i) protection against floods with short return periods (2 to 5 years), (ii) being able to include in COPECO's actions the supervision of works carried out by qualified professionals, and (iii) the creation of the CODELs as a strategy for the proper use, conservation, and protection of the works. In environmental and occupational safety matters, the participation of women protagonists in the DRM coordination and management was remarkable. *Negative impacts:* One of the respondents stated that some municipal officials did not support the project when requested because women made the request. However, all the projects implemented included a gender perspective. In the beginning, this discussion related to gender was absent at the institutional level, and the project managed to introduce its relevance. Therefore, it would be essential to be more specific in the actions focused on gender applied in future projects with a similar scope. The results by each group were:

Beneficiaries

<https://docs.google.com/forms/d/e/1FAIpQLScziciaufj480s0w55sdZFzJH7zvYocwECbzFRBYJQA9h1SyA/viewanalytics>

The information provided by beneficiaries through the ICR survey confirms the findings of the Project Final Evaluation regarding evidence of preparedness following Tropical Cyclones Eta and Iota has increased. Community members who historically had suffered from flood damage said that because of this preparedness and the implementation of structural and nonstructural mitigation measures in their Municipalities, their lives and properties are now protected, with no damages following Tropical Cyclones Eta and Iota. One of the interviewees said: “The Project was very helpful, we learned about disaster risk mitigation, and when Eta and Iota struck Honduras, there was no loss of life in our community, alerts were issued to the population in advance, due to the capacity building given to us by the project, and we alerted other neighboring communities” (*El Proyecto fue de mucha ayuda, aprendimos sobre la mitigación de riesgos de desastres, y cuando vino Eta e Iota, no hubo pérdidas de vidas en nuestra comunidad, se emitieron alertas a la población, debido a lo enseñado por el proyecto, asimismo, también alertamos a otras comunidades vecinas*). This is corroborated by the impact evaluation and the perception surveys where beneficiaries were asked to qualify their degree of satisfaction, as a result of the structural mitigation measures and training carried out by the PGRD - 97% of a representative sample of direct project beneficiaries reported satisfaction with COPECO's DRM project activities and 97% of sampled female beneficiaries were satisfied with COPECO's DRM project activities.

The interviewees highlighted the participation of the community in the maintenance of the structural mitigation measures and creation of CODELs and the significant improvement of infrastructure noticed by the communities. They conclude that the PGRD fulfilled its DRM objectives at the community level and strengthened the response and early warning capacities to reduce the impacts of natural disasters. Also, the participation of women in main positions in the CODELs was very important and represented 42%, out of the 40% planned, where the participation of Afro-descendant women stands out (60%). They also mentioned that the interinstitutional coordination strengthened the participation between COPECO, CODELs, and CODEMs.

Government/COPECO/PGRD

<https://docs.google.com/forms/d/e/1FAIpQLSc9fkWj-eiypXVWSEwy44MCZu3AIGk4I9eUBzIKdOfa5ol3GA/viewanalytics>

From the Government/COPECO/PGRD surveys, it can be concluded that the project effectively reached all the target indicators and that the main objective of strengthening national and municipal DRM was achieved. The main goals achieved by the Project that the interviewees' highlighted are: i) adoption of municipal disaster risk management plans and emergency plans; ii) implementation of structural/nonstructural mitigation measures; iii) rehabilitation of monitoring networks; iv) consolidation of the SINIT, RENOT, and SINAP; v) updating and dissemination of the standard methodology for territorial ordering with DRM approach; vi) strengthening of capacities for immediate response; and vii) creation of CODELs. These are consistent with the conclusions of this ICR. Regarding the structural mitigation measures, one of the interviewees mentioned the lack of participation of the municipalities as a negative aspect. This confirms the conclusion of the structural mitigation measures evaluation that the participation of municipalities seems to have been very limited. They also agree that the implementation of the Project was satisfactory, consolidating the DRM capacities and providing equipment and software for managing information related to DRM. All the above was achieved despite several limiting external factors, such as: political, environmental events, and the COVID-19 pandemic. They agree that the coordination was adequate; it was possible to maintain good communication and coordination in the work process, during the implementation of the Project, with national and local actors, and with the World Bank team, which was decisive to achieve significant progress.

Regarding the structural mitigation measures, they concluded that it strengthens security against natural disasters and reduces the vulnerability of critical areas, reduces the level of threat, reduces loss of assets, and above all, human lives. An important issue is to consolidate the sustainability of the works. They also commented that there is a desire for participation and leadership among women. There were successful experiences of women who led processes in the CODELs and CODEMs; therefore, it is important to promote a policy of gender equality and interculturality, defining the active participation of women and supporting indigenous peoples and Afro-Honduran communities.

ANNEX 9. SUPPORTING DOCUMENTS

1. *Restructuring Paper - Disaster Risk Management Project - P131094 (December 18, 2020).*
<https://documents1.worldbank.org/curated/en/151851608334362625/pdf/Disclosable-Restructuring-Paper-Disaster-Risk-Management-Project-P131094.pdf>
2. *Restructuring Paper - Disaster Risk Management Project - P131094 (June 10, 2020)*
<https://documents1.worldbank.org/curated/en/441431591828031359/pdf/Disclosable-Restructuring-Paper-Disaster-Risk-Management-Project-P131094.pdf>
3. *Restructuring Paper - Disaster Risk Management Project - P131094 (April 8, 2019)*
<https://documents1.worldbank.org/curated/en/554381554726698709/pdf/Disclosable-Restructuring-Paper-Disaster-Risk-Management-Project-P131094.pdf>
4. *First Amendment to the Financing Agreement for Credit 5190-HN (English)*
<https://documents1.worldbank.org/curated/en/153701468040528104/pdf/Official-Documents-First-Amendment-to-the-Financing-Agreement-for-Credit-5190-HN.pdf>
5. *Project Appraisal Document on a Proposed Credit in the amount of SDR 19.5 million (US\$ 30 million equivalent) to the Republic of Honduras for Disaster Risk Management Project (November 7, 2012).*
<https://documents1.worldbank.org/curated/en/116561468282846163/pdf/NonAsciiFileName0.pdf>
6. *2013-2021 Borrower's Project Report (August 2021).*
7. *Borrower's Project Economic Final Evaluation Report (August 2020).*
8. *Borrower's Project Technical, Economic, and Environmental Final Evaluation Report (August 2020).*
9. *Borrower's Project Quantity Final Evaluation Report and Impact Evaluation at the household level (August 2020).*
10. *Borrower's Project Qualitative and General Final Evaluation Report (August 2020).*