Report Number : ICRR0021633

1. Project Data

Operation ID P149831	**Operation Name** PE CAT DDO II	
Country Peru	**Practice Area(Lead)** Social, Urban, Rural and Resilience Global Practice	
L/C/TF Number(s) IBRD-84780	**Closing Date (Original)** 12-Mar-2018	**Total Financing (USD)** 70,000,000.00
Bank Approval Date 12-Mar-2015	**Closing Date (Actual)** 12-Mar-2018	

	IBRD/IDA (USD)	Co-financing (USD)
Original Commitment	400,000,000.00	0.00
Revised Commitment	70,000,000.00	0.00
Actual	70,000,000.00	0.00

Prepared by	Reviewed by	ICR Review Coordinator	Group
Cynthia Nunez-Ollero	Fernando Manibog	Christopher David Nelson	IEGSD (Unit 4)

2. Project Objectives and Policy Areas

a. Objectives

This operation was a stand alone, single tranche Development Policy Loan (DPL) with a Catastrophe Deferred Drawdown Option (CAT DDO). According to the February 8, 2015 Program Document (PD, paragraph 5 and Annex 2, Letter of Development Policy), the objective of this DPL was to "strengthen the institutional and legal framework to contribute toward the reduction of Peru's fiscal and physical vulnerability to disasters."

This review will assess the following objectives:

- to strengthen the institutional and legal framework to contribute toward the reduction of Peru's fiscal vulnerability to disasters.
- to strengthen the institutional and legal framework to contribute toward the reduction of Peru's physical vulnerability to disasters.

b. Pillars/Policy Areas

The PDO would be achieved through reforms under three pillars (Loan Agreement or LA, p.5-6, and PD, paragraph 35):

- <u>Improving efficiency in public resource allocations for disaster risk management,</u> which focused on strengthening the financing mechanisms for the implementation of the National Disaster Risk Management Plan (*Plan Nacional de Gestión del Riesgo de Desastres* or PLANAGERD) and mainstreaming disaster risk management (DRM) policies into subnational planning.

- <u>Strengthening vulnerability reduction policies in infrastructure for education and housing sectors and flood protection measures,</u> which focused on integrating vulnerability reduction policies in the education and housing sectors and establishing flood protection planning to reduce the impact of extreme weather events.

- <u>Increasing the Government's capacity for post-disaster recovery and reconstruction,</u> which focused on strengthening the Government's institutional capacity to effectively plan and implement post-disaster rehabilitation and reconstruction processes and guarantee the Government's operational continuity.

c. Comments on Program Cost, Financing, and Dates

Program Cost: The original program commitment was US$400 million. The total actual disbursement was US$70 million. After partial disbursement, the Government requested to close this operation after assessing its current debt profile, costs, and repayment needs and continued availability of other contingent lines of credit to provide immediate liquidity in case of another natural disaster (ICR, paragraph 18).

Financing: The International Bank for Reconstruction and Development financed this Development Policy Loan (DPL) with Catastrophe Deferred Drawdown Option (CAT DDO). This CAT DDO had a revolving feature where amounts repaid prior to the closing date would have been available for drawdown (PD, paragraph 37). Funds may be withdrawn after the declaration, through a supreme decree, of a State Emergency *(Estado de Emergencia).* The drawdown period for the operation was three years, renewable up to four times as long as the original program remained in place and the Bank reconfirmed the adequacy of the macroeconomic framework at the time of renewal.

Dates: The Loan was appraised on January 20, 2015 and approved on March 12, 2015. Its effectiveness date was on June 22, 2015. Loan withdrawals were made on February 15, 2018. The remainder of the loan (US$330 million) was cancelled on March 12, 2018 at the request of the Government. The Bank accepted the Government's Supreme Decree No. 14-2018 PCM signed by the President and published in the official gazette *"El Peruano*" on February 7, 2018 to fulfill the conditions precedent to withdrawing the funds (ICR, paragraph 17). Funds were released on February 15, 2018. The DPL was closed on March 12, 2018 as originally planned. A two-day stakeholder workshop was held on September 26-27, 2018.

3. Relevance of Objectives & Design

a. Relevance of Objectives

According to the World Bank's Study of Natural Disaster Hotspots, Peru ranked 20th among the world's economies most vulnerable to multiple natural hazards. Peru lies in a highly seismic region called the Pacific Ring of Fire, where about 80% of the world's earthquakes occur. In addition, the tropical west coast of South America exposes the country to *El Niño* oscillations, characterized by prolonged torrential rains that affect Peru's northern coasts (PD, paragraph 2). About 76% of Peru's population lives in urban areas and about 87% lives in the coastal and mountain regions. All are exposed to seismic, volcanic, flood, landslides and *El Niño /La Niña* phenomena, among others. The Government estimated a 33 million population by 2021 with as much as 63% who would be vulnerable to heavy rainfalls, frosts, droughts, and seismic activity.

Beginning in 2007, the Government collaborated and conducted dialogue with the World Bank to undertake a broad DRM strategy. Over the past five years, the Government has strengthened its legal and institutional framework to reduce disaster climate risk (ICR, paragraph 6). For example, Peru's National Agreement included a Disaster Risk Management Policy that promoted a culture of prevention to contribute toward sustainable development at the national and subnational levels. (*Sistema Nacional de Gestión del Riesgo de Desastres or SINAGERD),* established in 2011, adopted a comprehensive approach to DRM by asking all public agencies to include DRM considerations in their respective sectoral and planning processes to avoid new risks and reduce existing ones. The Government's 2011 institutional framework defined roles and coordination functions for various actors involved in managing disaster and climate risks. Among these were the Presidency Council of Ministers *(Presidencia del Consejo de Ministros* or PCM*),* the new National Center for the Estimation, Prevention and Reduction of Disaster Risks *(Centro Nacional de Estimación, Prevención y*

Reducción del Riesgo de Desastres or CENEPRED*),* and the National Civil Defense Institute *(Instituto Nacional de Defensa Civil* or INDECI*).*

The strong commitment of the government to reduce disaster risk was also evident in its comprehensive financial protection strategy against natural disasters by assigning the MEF to define and implement a national financial protection strategy against disasters, which included the resources from the first CAT DDO, among others. Since 2011, the Government has signed contingent lines of credit with the Bank, other international financial institutions and bilateral cooperation. These included US$300 million with *Banco de Desarollo de America Latina* (Development Bank of Latin America or CAF), US$300 million with the Inter-American Development Bank (IADB), US$100 million with the Japan International Cooperation Agency (JICA) and US$100 million from the first CAT-DDO.

The operation's objectives were relevant to the country's national development plan for 2016-2021, which focused on (i) jobs and formalization of workers and economic growth; (ii) public safety and fight against corruption; (iii) improving access to water and sanitation and social investments; and (iv) bringing the state closer to its citizens. Included in this plan was Pillar 3 for greater security supported by a program that would pay close attention to disasters and other natural hazards (https://www.presidencia.gob.pe/plan-de-gobierno). The objective was also consistent also with Peru's Bicentennial Plan 2021 that included policy guidelines to promote risk reduction and disaster risk management within the framework of sustainable development under Strategic Area (vi) Environment and Natural Resources. The objectives of the operation were also in line with the approved DRM law and the national DRM plan, PLANAGERD 2021. The impacts of *El Niño de Costeras* in 2017 only heightened the Government's resolve to continue to mainstream DRM in planning and investment processes at the national, sectors, and subnational levels. The government's financial and policy frameworks were adequate and in place to rapidly respond to the risk from natural hazards.

This second CAT DDO built upon the policy engagement started in the first CAT DDO (2010, US$100 million). This operation helped further strengthen the country's budgetary program for DRM and emergency response. The number of sectors with enhanced DRM consideration increased from health, and water and sanitation to include education, housing, and flood control. Further, this operation provided additional resources to boost the country's financial protection strategy against disasters (ICR, paragraph 8).

The operation was substantially relevant to the World Bank's Country Partnership Framework (CPF) for 2017-2021. The Systematic Country Diagnostic, which informed the CPF pointed out the high exposure to climatic risks and natural hazards as a key bottleneck to development (CPS, Table 2). This operation directly supported Pillar 3 - Natural Resource and Climate Risk Management (CPF, paragraph 39) and directly contributed to meeting objective 8 - Strengthen the Management of Natural Resources. The Bank's existing portfolio in Peru included access to four contingent lines of credit for US$3 billion, including two DPF-DDOs and two Catastrophe Deferred Drawdown Option (CAT-DDO). The DDOs also represented an important fiscal buffer in the event of an adverse shock (CPF, paragraph 42).

Rating

Substantial

b. Relevance of Design

The operation's theory of change was coherent - that disaster risk reduction needed to be built on strong institutions and preparation, and not just to respond to an emergency. A framework for coordination and processes to rapidly access liquidity following a disaster needed to be in place. At appraisal, the Bank team determined that the country's macroeconomic policy framework was adequate for the operation to proceed (PD, paragraph 16). The country's conservative fiscal stance and active liability management policy led Moody's to upgrade its sovereign rating to A3 with a stable outlook because of (a) continued strong fiscal position and good management of its public debt, (b) structural reforms that fostered productivity increases and positive economic growth, and (c) expected faster rate of GDP growth (PD, paragraph 14). The country was also considered to have adequate fiscal space to respond to external shocks if necessary (PD, paragraphs 15 - 16).

The PDO was straightforward. Indicators and expected results in the policy matrix were well designed. The causal chain between the prior actions and the expected outcomes was clear. The policy matrix provided policies that were specific and measurable (PD, Table 3). These prior actions were relevant and aligned with the operation's PDO and facilitated the outcomes of the operations. The approval of the DPL was contingent on the following prior actions linked to the PDO whereby the Government:

- has strengthened the financial mechanisms for the implementation of the National DRM plan by (i) integrating the existing DRM budgetary program in the new DRM policy framework, and (ii) including disaster risk information in regional development planning.
- has integrated seismic risk-reduction considerations for existing and new infrastructure into the National School Infrastructure Program (*Programa Nacional de Infraestructura Escolar* or PRONIED).
- has established the financing mechanisms for a pilot program to reduce seismic vulnerability of low-income housing.
- has taken measures to improve the design of flood protection programs at national and subnational levels by (i) expanding the mandate of National Water Authority (*Autoridad Nacional del Agua* or ANA) to conduct hydraulic studies that support the design of regional and local flood protection programs, and (ii) defining minimum specific standards for the preparation of pre-investment projects under the National Public Investment System (*Sistema Nacional de Inversión Publica* or SNIP) framework.
- has taken measures to improve post disaster recovery and reconstruction processes by (a) establishing the regulatory and institutional framework for reconstruction, and (b) defining MEF's internal coordination mechanism to finance rehabilitation and reconstruction processes.

The performance indicators were mutually reinforcing and causally linked to the objective. The legal and regulatory procedures were directly linked to operationalizing the functions of various institutional DRM stakeholders at the national and subnational levels. The focus on strengthening the legal and institutional DRM capacities complemented the fiscal aspects and resource mobilization directed at DRM. Design also emphasized inter agency consultation following the successful implementation of the first CAT DDO, which will end in December 2019. The choice of a DPL CAT DDO was appropriate because of its multi-sector scope, the participation of institutions at the national and subnational levels in carrying out DRM responsibilities, and rapid access to liquidity in case of a disaster. This was a single tranche operation built on the achievements and lessons learned from the implementation of the first CAT DDO.

The CAT DDO operations in Peru complemented the policy reforms and supported policy designed to consolidate DRM in the country. The key areas included sector risk reduction efforts, processes related to post disaster recovery and institutional development and financial mechanisms to improve public resource allocation for DRM. This supported the Government's move toward comprehensive DRM and away from emergency response. CAT DDO was complemented by Reimbursable Advisory Services and Technical Assistance designed to Peru School Infrastructure Baseline and the Peru School Infrastructure Programmatic approach, the latter coming up with a proposal for a national school infrastructure plan which integrated the mainstreaming of DRM in the sector and water, sanitation, and hygienic aspects. Both products strengthened the dialogue within the Ministry of Education and supported the inclusion the disaster risk reduction in school infrastructure investments and interventions.

Rating
Substantial

4. Achievement of Objectives (Efficacy)

Objective 1
Objective

• to strengthen the institutional and legal framework to contribute toward the reduction of Peru's fiscal vulnerability to disasters.

Rationale

The prior actions that were required and fulfilled by the time this DPL was approved were in line with the main objective of PLANAGERD to reduce the vulnerability of the population and their livelihoods to disaster and climate risks. Reforms in this policy area strengthened the financing mechanisms to implement PLANAGERD at all levels of Government including mainstreaming DRM policies in regional planning. The achievements of Objective 1 would be assessed in terms of the corresponding policy pillars, namely Pillars 1 and 3. The prior actions that were relevant to the above objective were:

- the Government strengthened the financial mechanism for the implementation of PLANAGERD by integrating the existing DRM budgetary program in the new DRM policy framework and including disaster risk information in regional development plans;
- the Government has taken measures to improve post disaster recovery and reconstruction processes by (i) establishing the regulatory and institutional framework for reconstruction; and (ii) defining the Ministry of Economy and Finance's (MEF) internal coordination mechanism to finance rehabilitation and reconstruction processes.

Pillar 1 - Improving efficiency in public resource allocations for DRM:

OUTPUTS:

- On May 12, 2014 the Supreme Decree No. 034-2014-PCM approved the 2014-2021 PLANAGERD.
- On December 4, 2014 the 2015 National Budget Law No. 30281, Annex 8 provided Allocations for the Budgetary Program (BP068).
- On May 23, 2014, the National Center for the Estimation, Prevention, and Reduction of Disaster Risk (*Centro Nacional de Estimación, Prevención, y Reducción del Riesgo de Desastres* or CENEPRED) passed the Administrative Resolution *(Resolución Jefatural*) No. 044-2014-CENEPRED/J, which approved the guidelines for incorporating disaster risk management in Regional Development Plans.
- On March 12, 2018 the 2016 and 2017 annual budgetary performance reports on PLANAGERD implementation under the results-based budgeting programs were published, meeting the target.
- 15 out of 25 regional governments approved regional plans for the prevention and reduction of disaster risk meeting target. Four additional regional plans were also prepared and in the process of approval after project closing.

OUTCOMES:

The Government improved its efficiency in public resource allocation for DRM as evidenced by:

- integrating the existing results-based DRM budgetary program (BP068) in the new DRM policy framework as reported in annual budgetary performance reports reported in 2016 and 2017. The Vulnerability Reduction and Emergency Response Budgetary Program 068 (PP068) was created in 2010 and was the financial mechanism through which public resources were channeled to promote investments in disaster risk reduction activities at the subnational and national levels. Budget allocations for DRM have been increasing in response to forecasts of a strong El Niño event in 2015 and 2016. Such increases highlighted the need to have a program line dedicated to rapid emergency response activities. In 2018 and 2019, the budget created a separate line for emergency activities to provide flexibility in the use of resources for executing agencies during an emergency response. The 2016 and 2017 budgetary performance reports published in the Presidency of the Council of Ministers (*Presidencia del Consejo de Ministros* or PCM) website. The budget program showed the financial resources required to implement the national DRM plan and contribute to achieving the objectives established under PLANAGERD 2014-2021.

- including disaster risk information in 15 approved regional development plans (target 15, achieved) to prevent and reduce disaster risk. The 25 regional governments defined, prioritized, and designed mitigation measures and risk reduction interventions. CENEPRED gathered hazard and risk information and assisted the regional governments to develop regional plans using the guidelines approved in 2014 and ensured that resources were prioritized for key interventions. Four other regions have completed their regional plans and were expected to be approved in mid-2019. The approval is taking time because of internal processes between the technical and legal offices in the regions. Provincial and municipal level plans were developed and approved, demonstrating the commitment from various levels of government to the DRM agenda.

Pillar 3 - Increasing the Government's capacity for post disaster recovery and reconstruction. This pillar was designed to increase the Government's capacity to rapidly deploy for post disaster recovery and reconstruction by establishing processes that guarantee operational continuity following a disaster.

OUTPUTS:

- Supreme Decree (*Decreto Supremo* or DS) No. 034-2014-PCM approved PLANAGERD 2014-2021. PLANAGERD included Objective 4: Strengthen the Capacity for Social, Economic, and Fiscal Recovery; and Objective 5: Build Institutional Capacity in Disaster Risk Management. It also allowed government entities to develop sector guidelines for the post disaster reconstruction process and operational continuity plans. The main objective is to build capacity in the various sectors to restore basic services and provide support to those in affected areas. Due to the impacts of *El Niño Costero* (landslides, floods, and huaycos) the sectors prioritized emergency response activities and provided inputs to the ARCC for its reconstruction plans, which allowed the sectors to improve their respective post disaster guidelines following the experience. CENEPRED supported the sectors in developing sector guidelines for the post disaster reconstruction process. Through SIMSE, CENEPRED tracked and monitored progress made by government entities in formulating and approving these guidelines.
- MEF's Ministerial Resolution No. 034-2015 -EF/10 dated January 25, 2015 defined the internal coordination mechanism to finance rehabilitation and reconstruction process.
- In May 2017, DS 132-2017-EF established the multi sector commission for the fund for intervention in the event of natural disasters (FONDES), achieving the target. The policies and procedures incorporated the financing of post disaster rehabilitation and reconstruction processes and an Annex with procedures to manage resources for recovery and reconstruction. This was an important step to have a mechanism in place with clearly defined roles, responsibilities, procedures and criteria to channel resources to respond in post disaster contexts. The decree also included the scope and types of interventions and investment

projects that can be financed by FONDES, useful to the sectors and subnational governments which submit requests for financing by FONDES.

- The National Civil Defense Institute *(Instituto Nacional de Defensa Civil* or INDECI) with RM 028-2015-PCM approved the guidelines for management operational continuity for the three levels of government under the National Disaster Risk Management System. These operational continuity plans identified critical activities and services which must be executed and provided without any service disruption similar to the protocols to respond in an emergency or disaster. INDECI provided technical assistance on the guidelines approved in 2015 and supported the government entities at the three levels of government in developing these plans.

OUTCOMES:

The institutional capacity of the Government to plan and implement post disaster rehabilitation and reconstruction was strengthened and guaranteed continuity of government operations following a disaster as evidenced by

- 6 national government sectors (agriculture and irrigation, justice, transport and communications, housing, education, and CENEPRED) have approved sector guidelines for the post disaster reconstruction process. Five other sectors were awaiting approval at project closing.
- 20 (original target 37, almost achieved) national government agencies have approved operational continuity plans in the event of a disaster. INDECI continued to work with the remaining government agencies to prepare their plans and approved in the coming year. INDECI carried out over 98 technical assistance activities. But there is still need to for the various entities to better understand and identify critical activities for which disruption must be minimized and key components for the operational continuity plans identified. The process for obtaining formal approvals for these plans from the authorities within each government entity needs to be expedited.
- An Operational Manual was approved with policies and procedures for the financing of post disaster rehabilitation and reconstruction processes.

On balance, the significant outcomes achieved under Pillar 1 lead to an overall rating of Substantial for the efficacy of PDO 1, while taking note that achieving Pillar 3 had some shortcomings. There appears to be a likelihood that a number of regional entities that have yet to integrate DRM in its development plans will be achieved in the future because the Vulnerability Reduction and Emergency Response Budgetary Program 068 (PP068) was in place. However, only 6 national government sectors had guidelines for post disaster reconstruction while five other sectors were awaiting approval by project closing (ICR, paragraph 44). In addition, while INDECI continued to provide all levels of government technical assistance to produce their respective continuity plans, their approvals needed to be expedited (ICR, paragraph 45).

Rating
Substantial

Objective 2

Objective

• to strengthen the institutional and legal framework to contribute toward the reduction of Peru's physical vulnerability to disasters.

Rationale

The prior actions that were required and fulfilled by the time this DPL was approved were also in line with the main objective of National Disaster Risk Management Plan (PLANAGERD) to reduce the vulnerability of population and their livelihoods to disaster and climate risks. The prior actions that were relevant to the above objective were:

- the Government integrated seismic risk reduction considerations for existing and new infrastructure under the National School Infrastructure Program (*Programa Nacional de Infrastructura Escolar* or PRONIED);
- the Government has established the financing mechanism for a pilot program to reduce the seismic vulnerability of low-income housing;
- The Government has taken measures to improve the design of the flood protection program at the national and subnational levels by
  - (I) expanding the mandate of the National Water Authority (*Autoridad Nacional del Agua* or ANA) to conduct hydraulic studies that support the design of regional and flood protection programs; and
  - (ii) define specific minimum standards for the preparation of flood protection pre-investment studies under the National System for Multi annual Programming and Investment Management (*Sistema Nacional de Programación Multianual y Gestion de Inversiones* or SNIP) framework.

Pillar 2 - Strengthening vulnerability reduction policies in infrastructure for the education and housing sectors and flood protection measures. This pillar was designed to increase (i) the education sector's capacity to implement disaster risk reducing policies in school infrastructure; (ii) the housing sector's capacity to support and facilitate the reduction of seismic vulnerability of low income households; and (iii) the institutional capacity to define and implement flood protection policies.

OUTPUTS:

- The Supreme Decree No, 004-2014-*Ministerio de Educación* or MINEDU established the National School Infrastructure Program (*Programa Nacional de Infrastructura Escolar* or PRONIED). In 2015, PRONIED implemented Plan Lima. This short-term plan was designed to reduce critical risk conditions in over 350 school facilities in the Metropolitan Lima area by (I) demolishing school buildings at risk of collapse; (ii) installing temporary classrooms; and (iii) providing for maintenance and refurbishment. PRONIED installed 825 prefabricated school modules and works in 25 school facilities. After *El Niño Costero* in 2017, MINEDU carried out risk reduction interventions in the affected regions in the north by installing temporary classrooms. MINEDU then reviewed the methodology used to measure how much risk was reduced by the interventions. By March 2017, MINEDU approved the first National School Infrastructure Plan 2025 (Ministerial Resolution No. 153-2017), which guided policy and investments and included a seismic vulnerability reduction program. In 2018, PRONIED implemented a pilot seismic retrofitting program with plans to scaling up in the coming years.

• About 75% of the housing stock of 7.8 million houses were in urban areas and at least 50% were in cities with high seismic hazard (e.g., Lima, Arequipa, Moquegua, and Chincha). The Grant Program for the Protection of Housing Vulnerable to Seismic Risk, started in 2014, provided low income households with financial and technical support for seismic retrofitting interventions of their homes through the Ministry of Housing, Construction, and Sanitation (*Ministerio de Vivienda, Construcción y Saneamiento* or MVCS). The MVCS engineers assessed and executed the reinforcement civil works to create 14 m2 safe zone in the event of a high intensity earthquake. Using technical information from seismic microzonation studies that were available for 12 districts helped MVCS to begin retrofitting after the August 2016 earthquake, first in Lima, followed by Arequipa the second largest city with close to 1 million residents. MVCS disbursed 4,246 grants or 65% of the total 6,512 eligible households under the program as of September (original target was 80% of 8,303 households, almost achieved).

• At the beginning of the PEN100 million grant program, each grant was established at PEN12,000, later increased to PEN15,000. After the 2016 earthquake in Caylloma, Arequipa, each grant was increased to PEN23,500. With the grant program envelope remaining at PEN100 million, the number of eligible households was adjusted over time. By 2018, disbursements have reached PEN65 million. By October 2018, MVCS approved the regulatory guidelines to include interventions in the regions most affected by the *El Niño* (Ministerial Resolution No. 336-2018-VIVIENDA) and would include 1,177 households in 11 regions. Lessons learned in implementing this grant program allowed the MVCS to look to longer term housing vulnerability reduction policy, taking into consideration the high seismic risk of the housing stock and exposure to other natural hazards.

• The ANA provided technical assistance to subnational governments to design flood protection programs. In 2017 two studies were approved - identification of vulnerable populations by the activation of quebradas (rivers) and Flood Atlas for the prioritized rivers of Agua Jequetepeque Zarumilla. This study outlined the flood prone areas caused by 12 rivers. ANA worked with Japan International Cooperation Agency (JICA) on a study for flood management at the national level, analyzing 159 watersheds to inform the cost estimates for investment projects. In 2017, ANA identified 627 critical points nationwide at risk of flooding and erosion and was provided to the 24 regional governments and sectors within the framework of SINAGERD. The evidence-based knowledge developed by ANA was key to identifying, prioritizing, and designing interventions for critical flood prone areas. They also provide technical guidance and recommendations to implement regional and local flood protection areas.

- 5 studies in flood risk prevention and mitigation in watersheds were approved by project closing (target 4, exceeded). An additional 7 additional studies were in the process of being approved by project closing.

OUTCOMES:

- The government implemented PRONIED to reduce seismic risk in Metropolitan Lima's school infrastructure. This seismic risk was measured by a Risk Indicator (RI) or the total ratio of expected annual loss to the total value of exposure times 1,000. The Lima Metropolitan area, with a portfolio of 1,969 school facilities, had a baseline RI of 20.3%. By September 2018, the government has reduced the earthquake risk of Lima schools by 13%, exceeding the target of 10% (See Annex 3, Borrower's Comments on the ICR or Borrower's Final Implementation Report, Section 3, Table 1).
- A Grant Program to Protect Housing Vulnerable to Seismic Risk was established with an envelope of US$100 million. By project closing, 4,235 grants benefited 65% of 6,512 eligible households (original target was 80% of 8,303 households or 6,642 households, almost achieved). The initial grant established was PEN12,000 per household. This was increased first to PEN15,000 and then to PEN23,500 to include households in Arequipa following the earthquake there. With the envelope remaining constant at US$100 million, eligible households were reduced from 8,303 to 6,512.
- Five studies for flood risk prevention and mitigation in watersheds have been approved (target 4). Seven more studies were expected to be approved in 2019. These studies included a vulnerability analysis and proposed both structural and non-structural interventions focused on risk reduction and reducing the probability of losses from an extreme flood event. The studies were submitted to executing entities, regional and local governments for implementation through investment projects. ANA provided technical advice at the subnational level and supported the formulation of eight pre-investment technical studies for mitigation works in 8 rivers. These were submitted to the regional and municipal governments for their approval and implementation.

The efficacy of this objective based on the outcomes under Pillar 2 was rated substantial because processes were instituted for future DRM strategies in the sectors.

Rating
Substantial

5. Outcome

The relevance of objectives was rated substantial. The relevance of design was also rated substantial. On balance, the significant outcomes that were achieved under Pillars 1 and 2 lead to an overall outcome rating of substantial, while noting that there were shortcomings in achieving outcomes under Pillar 3. On the basis of these ratings, the overall outcome rating is satisfactory.

a. Outcome Rating

Satisfactory

6. Rationale for Risk to Development Outcome Rating

There was a modest risk to sustaining the development outcomes of this operation.

- Institutional and legal frameworks were in place to support disaster risk management in the country at the national level. The strong Government commitment of the government to reducing disaster risk was evident in its comprehensive financial protection strategy against natural disasters. The implementing agency, the Ministry of Economy and Finance (MEF) assessed the country's current debt profile and assessed the costs associated with this CAT DDO including repayment obligations and concluded that after the partial disbursement of US$70 million this second CAT DOO would be closed (ICR, paragraph 18). Peru still had access to US$100 million from the first CAT DDO, which will close in December 2019. In February 2018 Peru signed the first catastrophe bond issued by the World Bank to provide US$200 million of insurance protection against earthquake losses using parametric formula. In addition, laws are in place to continue to manage disaster risk. These laws and policy reforms, however, require time to implement and become operational on the ground.

- The legal and institutional framework that would strengthen the government's commitment to reducing risk from disasters need to include also the subnational levels, both at the local government and the regional levels. The national level entities including the MEF, as well as sector level entities need to offer their technical support and human resources to help focus the investments and policy agenda that are implemented at the subnational level.

- The continuing threat from natural hazards remain. But the financial structure that the government has in place and the policy framework it has adopted would mitigate this risk because of its preparedness to rapidly respond with post disaster recovery and reconstruction.

a. Risk to Development Outcome Rating

Modest

7. Assessment of Bank Performance

a. Quality-at-Entry

The Bank was well prepared for this operation. Lessons from the first CAT DDO, which is scheduled to close in December 2019 informed the design of this single tranche operation. The project was well aligned with the Government's priorities and served as an avenue to deepen the engagement with the Bank on disaster risk management. The policy matrix and prior actions were based on detailed and robust analytics, were in line with the Government's priorities, and helped strengthen their commitment to reducing the risk from natural hazards. Following the success of the first CAT DDO also implemented by the MEF, the Government provided evidence of its commitment to implementing comprehensive DRM program. Evidence was derived from the progress of three policy areas that were rated as Highly Satisfactory (PD, paragraphs 80-81). All seven policy results were achieved in 2014. MEF as coordinating body was supported by the General Directorate for Debt and Public Treasury, the Directorate of Selected Program Coordination Unit and the respective line ministries and agencies working on policy reforms.

Quality-at-Entry Rating

Satisfactory

b. Quality of supervision

The Bank conducted semiannual missions to assess progress towards expected results and achieving the PDOs. The Bank also maintained close policy dialogue with the Government. The Bank provided key technical support especially during the aftermath of the March 2107 *El Niño Costero* event. In addition, the Bank provided technical assistance to the Ministry of Education in its effort to integrate risk reduction in school infrastructure investments. As a result, MINEDU came up with a proposal for a National School Infrastructure Plan. This Plan was based on a series of technical and analytical reports and included a national level seismic risk assessment of 45,000 school facilities (or 180,000 school buildings). MINEDU also convened a research group from the top local universities to develop a retrofitting solution for a group of highly vulnerable school buildings.

Quality of Supervision Rating

Satisfactory

Overall Bank Performance Rating

Satisfactory

8. Assessment of Borrower Performance

a. Government Performance

Evidence of the Government's strong commitment to the DRM agenda was reflected in implementing the institutional, legal, and budgetary processes as provided in the policy matrix that supported this operation. There was strong support to the five prior actions that led to meeting the expected outcomes of the 3 policy areas or pillars. Achievements under each pillar were mostly substantial and strengthened the legal and regulatory framework to reduce the country's fiscal and physical vulnerability to disasters. The Government's commitment to a comprehensive DRM strategy was also evident in its support to expanding its financial protection strategy against disasters. In addition to these first and second CAT DDOs, the Government joined Chile, Colombia, and Mexico in forming the Pacific Alliance to access the US$1.36 billion sovereign sponsored catastrophe bond issued by the World Bank. Peru's US$200 million risk insurance covered earthquake risks for 3 years. Triggers were parametric with data to be supplied by the US Geologic Survey (ICR, paragraph 19).

Two events affected implementation. The first, in 2016 and 2017, CENEPRED and INDECI were transferred to the Ministry of Defense. This move caused some implementation delays under Pillar 3 regarding agencies with approved continuity policies, achieving only 20 of the 37 agencies with approved continuity plans. The second, in March 2018 when the president resigned, a new administration was sworn in, causing some delays but key technical staff remained to implement the remainder of the program. There was continued interest in the Government to move forward with the DRM agenda, expressing interest in another CAT DDO after the first one ends in December 2019 that would allow the Government to further consolidate DRM in the planning processes at the subnational levels. There was also interest expressed in support of an Investment Project for the education sector to build on the outcome of the technical assistance, i.e., a proposal for a National School Infrastructure Plan based on a national level seismic risk assessment of 45,000 school facilities representing 180,000 school buildings and a retrofitting solution for highly vulnerable school buildings (ICR, paragraph 59).

Government Performance Rating

Satisfactory

b. Implementing Agency Performance

The Ministry of Economy and Finance (MEF) implemented this operation. It had a strong inter-institutional coordination and was supported by the General Directorate for Debt and Public Treasury (*Direccion de General de Endeudamineto y Tesoro Publico* or DGETP), the Directorate-Sectoral Program Coordination Unit (*Direccion Unidad de Coordination de Prestamos Sectorales* or DUCPS) and the respective line ministries and agencies tasked with carrying out DRM policy reforms such as INDECI, CENEPRED, the Secretariat for DRM of PCM, MVCS, MINEDU, and ANA (PD, paragraph 81 and ICR, paragraph 61). As noted above, even with a new administration taking over in March 2018, there was adequate transition arrangement to complete project closing. This was evident from the implementing agency preparing its own completion report outlining the results and outcomes of the operation and sustainability challenges ahead. One of these challenges was strengthening the link between SINAGERD and MEF's Disaster Reduction Financial Management Strategy to improve evidence-based interventions financed by the budget program PP 0068. Another was how to accomplish a more efficient transfer of risks to reduce the impact of disasters on public resources.

Implementing Agency Performance Rating

Satisfactory

Overall Borrower Performance Rating

Satisfactory

9. M&E Design, Implementation, & Utilization

a. M&E Design

The objectives of the operation were clearly stated. The theory of change was sound. Indicators and expected results in the policy matrix were well designed in terms of being specific and causally linked to measuring the achievement of the PDO. These were also relevant to the overall program and were time bound. Indicators were tied to prior actions supporting the pillars of the operations. Targets were in line with the PLANAGERD 2014-2021, which established a set of specific objectives and priority areas in disaster risk management. Indicators were part of ongoing government programs with established reporting mechanisms. M&E design was well embedded in the MEF. The MEF as implementing agency was assigned to monitor the operation.

b. M&E Implementation

Input, outputs, and outcomes were collected and analyzed in sound manner. Some challenges that affected monitoring progress during implementation were:

- the initial difficulty in applying the methodology to measure the risk reduction indicator to capture the share in how the seismic risk in school infrastructure was reduced; and
- the change in the number of low-income households eligible for grants under the program to protect housing vulnerable to seismic risk. Originally, there were 8,303 eligible households. Eligible households were expanded to include those in Arequipa after the August 2016 earthquake. By October 2018, 1,177

households in 11 regions most affected by *El Niño* were included. The program adjusted grant amounts from an initial PEN12,000 per household to PEN15,000 per household and finally to PEN23,500 per household by project closing. The overall funding envelope was unchanged at PEN100 million and targeted 6,512 eligible households.

These indicators were new to the implementing agency to monitor but were rectified during implementation with the Bank working with the concerned entities to refine the data collection approach for these indicators.

c. M&E Utilization

Decision makers were informed of progress and resources required in different sectors under the program - housing, education, and flood protection. For example, CENEPRED directed its technical assistance to the remaining 7 of the 26 regional governments that needed help in preparing and approving their respective continuity plans. M&E had reported that 15 regional governments had approved their disaster prevention and risk reduction plans while another 4 were in the process of being approved.

M&E Quality Rating

Substantial

10. Other Issues

a. Environmental and Social Effects

No safeguard policies were triggered by the operation. The PD expected that the prior actions for the operation were not likely to cause significant effects on Peru's environment, forests, and other natural resources (PD, paragraph 71). Each pillar of the operation was noted to enhance proper natural resource and environmental management.

b. Fiduciary Compliance

No fiduciary issues arose from this operation and no compliance problems were noted in the ICR. The PD noted that the results of the 2009 Public Expenditure and Financial Accountability (PEFA) concluded that, overall, public financial management was functional well and in line with international best practices. Proceeds from the DPL CAT DDO were provided as budgetary support to the Government and not earmarked for any government agency. This operation did not have any procurement requirement. The ICR did not mention that any financial audit was conducted.

c. Unintended impacts (Positive or Negative)

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d. Other

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11. Ratings

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Satisfactory	Satisfactory	---
Risk to Development Outcome	Modest	Modest	---
Bank Performance	Satisfactory	Satisfactory	---
Borrower Performance	Satisfactory	Satisfactory	---
Quality of ICR		Substantial	---

Note
When insufficient information is provided by the Bank for IEG to arrive at a clear rating, IEG will downgrade the relevant ratings as warranted beginning July 1, 2006.
The "Reason for Disagreement/Comments" column could cross-reference other sections of the ICR Review, as appropriate.

12. Lessons

The ICR identified four lessons and three are presented below that may be useful to other similar operations (with some paraphrasing):

- The impacts from *El Niño Costero* highlighted the need to integrate risk reduction in the development and planning processes, particularly for entities at the sector and subnational levels that are tasked with managing vulnerable infrastructure. In the case of Peru, strengthening the subnational governments' technical and financial capacity was critical to ensure that risk reduction criteria were integrated into investments and that there was local capacity to implement continuity plans following a natural disaster.

- The design of a rapid disbursing CAT DDO operation and pursuing policy reforms to promote a strong DRM program require a sound understanding of the institutions, challenges, and development priorities of the country. Good dialogue is paramount in shaping the dialogue with the country and helping define the metrics that would monitor progress within the three-year timeframe of the operation. These metrics should tap into the government's ongoing efforts and programs. In the case of Peru, the dialogue and inclusion of the education, housing, and water sectors, ensured that reforms could be translated into concrete actions in risk reduction investments and interventions. Introducing new indicators require careful assessment of local capacity to evaluate its progress and may require additional support during implementation.

- The use of CAT DDOs may be an effective entry point to engage with key sectors to further advance the DRM agenda in a country and promote investments in risk reduction. In the case of Peru, technical assistance activities in the education sector that covered seismic risk assessment of school facilities resulted in the approval and adoption of the first National School Infrastructure Plan in 2017, currently under implementation.

13. Assessment Recommended?

No

14. Comments on Quality of ICR

The ICR was well prepared and provided a detailed overview of the operation. It was concise and followed guidelines. The report was results focused, generally aligned with the PDO, and provided a detailed and accurate overview of the operation. The theory of change and the policy matrix were effective in supporting the rationale for the ratings. The report also effectively provided data to assess project relevance and efficacy. The evidence provided and the lines of reasoning supported the ratings. There was ample evidence to support the Government's efforts in strengthening the fiscal aspects of implementing of a comprehensive DRM strategy. For example, the various decrees outlined how these supported the policy actions and pillars that contributed to achieving the expected outcomes of the operation. It was candid as reflected in the implementing agency's own assessment of the challenges faced during implementation. The lessons were clear, useful, and based on the evidence outlined in the ICR. There was a minor shortcoming in terms of providing a complete account of the implementation of M&E although the information regarding how the indicators were refined were found in the Annex (Annex 3, Summary of Borrower's ICR).

a. **Quality of ICR Rating**
Substantial