



**The World Bank**

Peru: Enhancement of Environmental Quality Services (P147342)

REPORT NO.: RES42694

RESTRUCTURING PAPER  
ON A  
PROPOSED PROJECT RESTRUCTURING  
OF  
PERU: ENHANCEMENT OF ENVIRONMENTAL QUALITY SERVICES  
APPROVED ON JANUARY 11, 2017  
TO  
REPUBLIC OF PERU

ENVIRONMENT, NATURAL RESOURCES & THE BLUE ECONOMY

LATIN AMERICA AND CARIBBEAN

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**ABBREVIATIONS AND ACRONYMS**

ANA	National Water Authority ( <i>Autoridad Nacional del Agua</i> )
CA	Environmental Certification
DEAM	Environmental Assessment Directorate ( <i>Dirección de Evaluación Ambiental</i> )
DGCA	Department of Environmental Quality ( <i>Dirección General de Calidad Ambiental</i> )
DIA	Environmental Impact Statement ( <i>Declaración de Impacto Ambiental</i> )
DIGESA	Department of Environmental Health ( <i>Dirección General de Salud Ambiental</i> )
ECAS	Environmental quality standards ( <i>estándares de calidad ambiental</i> )
GoP	Government of Peru
IGA	Environmental Management Instrument
LMPs	Maximum permissible limits ( <i>límites máximos permisibles</i> )
MEF	Ministry of Economy and Finance ( <i>Ministerio de Economía y Finanzas</i> )
MINAM	Ministry of Environment ( <i>Ministerio de Ambiente</i> )
MOP	Operations Manual ( <i>Manual de Operaciones del Proyecto</i> )
MTR	Mid-Term Review
OEFA	Agency for Environmental Assessment and Enforcement ( <i>Organismo de Evaluación y Fiscalización Ambiental</i> )
PCU	Project Coordination Unit
PPC	Stakeholder Engagement Plan ( <i>Plan de Participación Ciudadana</i> )
PRODUCE	Ministry of Production and Fisheries ( <i>Ministerio de la Producción y Pesca</i> )
SENAMHI	National Meteorology and Hydrology Service ( <i>Servicio Nacional de Meteorología e Hidrología</i> )
SINIA	National Environmental Information System ( <i>Sistema Nacional de Información Ambiental</i> )



**BASIC DATA**

**Product Information**

Project ID P147342	Financing Instrument Investment Project Financing
Original EA Category Partial Assessment (B)	Current EA Category Partial Assessment (B)
Approval Date 11-Jan-2017	Current Closing Date 01-Jun-2022

**Organizations**

Borrower REPUBLIC OF PERU	Responsible Agency Ministry of Environment, Organismo de Evaluacion y Fiscalizacion Ambiental
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**Project Development Objective (PDO)**

Original PDO

The objective of this project is to generate and share information for environmental quality control at the national level by supporting the Government of Peru to improve its environmental monitoring and analytical capacity, increase public access to environmental quality information, and promote informed public participation in environmental quality management.

**Summary Status of Financing (US\$, Millions)**

Ln/Cr/Tf	Approval	Signing	Effectiveness	Closing	Net		
					Commitment	Disbursed	Undisbursed
IBRD-86800	11-Jan-2017	08-Feb-2017	10-May-2017	01-Jun-2022	40.00	4.24	35.76

**Policy Waiver(s)**

Does this restructuring trigger the need for any policy waiver(s)?

No



## I. PROJECT STATUS AND RATIONALE FOR RESTRUCTURING

### A. Background

1. The estimated annual cost of environmental degradation in Peru amounted to 4.1 percent of its GDP in 2012<sup>1</sup>. Most of this cost was associated with morbidity and mortality as a result of indoor and outdoor air pollution, inadequate water, hygiene and sanitation, and lead exposure – environmental risks that disproportionately affect the poorest and most vulnerable groups and, consequently, contribute to the vicious cycle of poverty. Despite its efforts to address pollution and environmental health risks, the Government of Peru (GoP) has limited capacity for environmental quality control.

2. Environmental monitoring and analysis capacities are insufficient. Regular air quality monitoring is limited to major urban centers, such as Lima-Callao, and water quality monitoring is not performed on a regular basis<sup>2</sup>. The main criteria for the location of those few monitoring stations is the incidence of environmental complaints and/or conflicts, rather than the high levels of pollution. As a result, environmental monitoring does not reach several high polluted areas. Monitoring practices are not consistent across different monitoring stations<sup>3</sup>. Some environmental quality and compliance standards are absent or inadequate. There are also problems in the use of statistical methods for sampling, including the uncertainty level associated with the sampling results, which has affected the validity and representativeness of the environmental data. Due to these analytical shortcomings, the aggregate results of environmental quality data in air and watersheds are not always reliable and, therefore, of little usefulness to underpin environmental policy making. Monitoring efforts are also hampered by poor analysis. In Peru, third party laboratories undertake most of the analysis of samples, and the authorities do not maintain rigorous quality control amongst the labs. Existing laboratories can only analyze up to 53 out of the 105 legally required parameters related to water environmental quality standards (ECAs), and only a few laboratories are capable of measuring air quality parameters. As a result of these weaknesses, the available environmental quality data has not satisfied the public's demand for knowledge. In 2010, the GoP developed a National Environmental Information System (SINIA), with the purpose of collecting environmental management information from related authorities, performing data processing and analyses, and enabling data access and dissemination; however, the platform does not have sufficient processing capacity to collect, store and share the environmental quality information.

3. The Peru Enhancement of Environmental Quality Services project aims to generate and share information for environmental quality control at the national level, by supporting the GoP to improve its environmental monitoring and analytical capacity, increase public access to environmental quality information, and promote informed public participation in environmental quality management. The Project directly supports the Ministry of Environment (MINAM) and the Agency for Environmental Assessment and Enforcement (OEFA) to (i) improve the regulatory framework for environmental quality control; (ii) increase environmental monitoring and analytical capacity; (iii) enhance quality assurance and quality control of environmental monitoring systems; (iv) modernize information disclosure and interactive services to the public, providing free access to reliable environmental quality data. The total cost of the Project is US\$ 70.41 million, of which US\$ 40 million is being Bank-financed.

4. The Project has three components:

**Component 1:** Improve Environmental Quality Control (US\$ 61.42 million, of which US\$ 37.28 million is financed by the Bank Loan), which supports MINAM and OEFA to carry out their responsibilities in air, water and soil

<sup>1</sup> World Bank, 2016, Perú: Como reducir la contaminación y ampliar los servicios de control de calidad ambiental, Notas De Política.

<http://documents1.worldbank.org/curated/en/928271476428971072/pdf/109077-BRI-P160939-Series-Per%3%ba-Notas-de-Pol%3%adtica-2016-PUBLIC-Cmoreducirlacontaminacinyampliarlosserviciosdecontroldecalidadambiental.pdf>

<sup>2</sup> Clean Air Institute (2015), Peru: Air Quality Monitoring Under Mining Driven Development. Final report prepared for the World Bank. Unpublished.

<sup>3</sup> ibid



monitoring and analysis based on an improved regulatory framework, the development of capacities and infrastructure for effective environmental monitoring, and the strengthening of analytical and quality control and quality assurance capacities. Subcomponent 1.1 finances the preparation of technical standards, protocols and guidance for ambient monitoring and analytical activities, baselines and pollution sources studies for supporting evidence-based policy making and environmental quality control. Subcomponent 1.2 finances the design and installation of air and water quality monitoring networks; the emission inventory study and a pollution dispersion modeling exercise for Lima, among other activities. Subcomponent 1.3 supports OEFA to design, build and equip a state-of-art national environmental analysis laboratory.

**Component 2:** Improve Information and Public Participation for Environmental Quality Control (US\$ 4.83 million, of which US\$ 2.72 million is financed by the Bank Loan), which aims to improve SINIA's capacity to collect, store and share environmental quality information generated by various public agencies, and to facilitate the data dissemination and public participation in environmental quality management. This component supports (i) MINAM and the National Meteorology and Hydrology Service (SENAMHI) to upgrade the capacity and safety of their data centers; (ii) the interconnection of existing environmental quality databases; (iii) the development and deployment of user-friendly IT platforms and communication tools for the general public, among other activities.

**Component 3:** Project Management (US\$ 4.16 million, fully financed with counterpart contributions). This component supports MINAM and OEFA's efforts to implement the project activities, through provision of technical assistance, goods, consultants' services and operating costs. This component will also finance the land where the laboratory will be built.

## B. Status of Implementation

5. **Overall project implementation.** As per the latest Implementation Status & Results Report (ISR) (November 2020), the progress towards achievement of the Project Development Objective (PDO) remained moderately satisfactory (MS). Although the project was able to overcome the first delays occurred as a result of the COVID-19 pandemic, it still needs a restructuring to lower targets of Intermediate and PDO indicators because of the initial (pre-Covid) delays that resulted from the long process to establish the Project Coordination Unit (PCU) and additional studies needed before implementation. The Overall Implementation Progress rating remained MS because of delays – before and during the health emergency – in key outputs, such as the (i) comprehensive environmental quality monitoring of the Rimac river;<sup>4</sup> (ii) datacenters of MINAM and SENAMHI<sup>5</sup> and (iii) the final design for the air quality monitoring stations. Consequently, disbursements have been lower than planned and, without a formal restructuring, intermediate results indicators (IRI) have not been achieved.

6. Despite those constraints, the Project achieved progress in other key outputs. Implementation of subcomponent 1.1 is well advanced. Based on a Project-financed analysis, MINAM approved the National Protocol for the Monitoring of Environmental Air Quality (Supreme Decree 010-2019-MINAM). MINAM has completed other key consultancies to underpin (i) the Methodological Guide for estimating costs and benefits of air quality regulations, within the framework

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<sup>4</sup> This consultancy is currently suspended. According to OEFA, the consortium did not comply with the technical standards for collecting, storing and transporting the monitoring samples, and allegedly altered some pictures of the sampling activities. OEFA suspended the consultancy contract and requested the consortium to address the observations to the corresponding product within 30 (thirty) days. This deadline, however, has been suspended since the GoP declared the state of emergency. This output is not essential for achieving the PDO, neither linked to any results indicators.

<sup>5</sup> The delay was caused because SENAMHI had to move its headquarters to a provisional location. This move delayed the delivery of the datacenters for both institutions, as the backup equipment for MINAM's datacenter would be placed at SENAMHI and *vice versa*. Because of the uncertainty around SEMANHI's permanent office, both datacenters will be placed at MINAM's headquarters. Thus, the consultancy firm hired to design the datacenters waited several months to complete its work. The new design requires small civil works to remodel MINAM's main office to safely accommodate the equipment of both datacenters which were not previously envisaged in the project. Despite this delay, the PCU expects to complete the datacenters by March 2021, without impacting the achievement of the PDO.



of the Regulatory Impact Analysis (RIA); (ii) new ECAs for arsenic, cadmium and chromium (heavy metals) in air; (iii) new maximum permissible limits (LMPs) for emissions in steel and foundries, mining-metallurgical, industrial cauldrons, and brick production activities; and (iv) the Manual for Determining the Soil Quality Baseline within the framework of preparing environmental impact studies. In the next months, MINAM will prepare draft regulations based on those analyses. The final output under subcomponent 1.1 – i.e. the study on LMPs for effluents – is planned for the first semester of 2021. In subcomponent 1.2, OEFA has completed the study for the location of air quality monitoring stations; signed and disclosed partnership agreements with 9 out of 14 local institutions that will host the equipment;<sup>6</sup> and started the consultancy for the final design of the air quality monitoring networks. The consultancy for the final design of water and soil quality monitoring networks is under implementation and expected to be completed by February 2021. The consultancy to update the emissions inventory for Lima is also advancing, despite initial delays caused by the pandemic. Subcomponent 1.3 has also made progress, as OEFA completed the preliminary studies, purchased the land plot, and has advanced in the final design and environmental instruments of the laboratory. To expedite the procurement process for the construction and equipment of the laboratory, OEFA has conducted an active search of potential bidders and issued a call for expressions of interest (EOIs). As agreed with the Bank, OEFA will issue a second call for EIOs in mid-December and will host a workshop for prospective bidders in January to explain the requisites and other key features of the selection process. Additionally, Component 2 is back to its course. MINAM has completed the demand study to assess the needs for environmental information, access capacities and types of users of SINIA; the final design of the technological infrastructure to upgrade MINAM's and SENAMHI's datacenters; and, studies to improve data collection, storage and sharing in SINIA. The bidding process for installing the datacenters is advanced and the new equipment is expected to be delivered by April 2021.

7. As of end of November 2020, the Project disbursed US\$ 4.24 million – equivalent to 10.6 percent of the loan. As the Borrower contributes with approximately 43% of the total funding, the GoP covered the major costs of the Project's first years of implementation (i.e. US\$ 10.6 million), including the purchase of the land plot for the laboratory and all expenses of the Project Coordination Unit (PCU). Consequently, the total budgetary execution of the Project reached US\$ 14.3 million in FY20 (20.4 percent of the total funding). The lower disbursement rate is associated with two major factors: (i) the GoP required more detailed studies and additional activities – not foreseen at the design stage –, and (ii) the complexity of some consultancies, as these are novel activities for the country (in some cases for the region) and required more time for drafting terms of reference and conducting procurement processes. For example, the original outputs and disbursement schedule did not entirely consider the additional analyses needed prior to civil works and equipment purchase for the environmental laboratory, as well as the air, water and soil quality monitoring stations. Those initial delays were later aggravated by the state of the emergency caused by the Covid-19 pandemic. As those outputs account for the largest share of the loan, disbursements are expected to exponentially increase in the next two years with the setting up of the laboratory and monitoring stations.

8. According to OEFA's projections, loan disbursements will amount to US\$ 5.9 million in FY21, covering the following activities: (i) consultancy for the final design studies to improve data collection, storage and sharing in SINIA; (ii) datacenters of MINAM and SENAMHI; (iii) final design of the environmental laboratory; (iv) studies on maximum permissible limits; (v) final design of water and soil quality monitoring stations; (vi) final design of the air quality monitoring network; (vii) emissions inventory for Lima, among others. Based on the revised implementation plan agreed at the MTR, OEFA expects to disburse the remaining funds in FY22. Since then, the Bank has followed up with the UCP on the regular basis on each procurement process and contract under implementation – which are all under tight schedule until the Project closing. In case of any additional delay in the major contracts – e.g. related to the laboratory or air quality monitoring networks –, OEFA will not be able to execute the Project funds and, consequently, the projected disbursements

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<sup>6</sup> Other two agreements have been negotiated and will be signed in December 2020. Other two agreements, for host institutions in Cusco, are under negotiation.



will be affected. In the next ISR, based on an updated the implementation plan, the Bank will assess whether an extension of the closing date is needed and reasonable.

9. **Effects of the Covid-19 pandemic on Project implementation.** As the GoP declared a national state of emergency in March 2020, most governmental agencies at both national and subnational levels suspended their activities for more than three months. Following those orders, OEFA issued a statement to close its offices – including the PCU – and suspended deadlines of all administrative procedures, including those related with the Project. The quarantine also delayed consultancies that required international experts to travel to Peru; field work; environmental permits, and/or data from public agencies (e.g. information from SENAMHI and the Department of Environmental Health to complete the emissions inventory).

10. To address delays in procurement processes and output delivery, the PCU has worked remotely in the review of deliverables that were submitted before the quarantine and has prepared documentation for upcoming procurement processes. In April 2020, the Bank approved a request from the PCU to temporarily waive the requirements of the Operations Manual (MOP) for the submission of physical documents. During the emergency period, the PCU has processed all documents related to contract deliverables, financial management and legal issues in digital format with scanned signatures. Once the quarantine ends, the PCU will receive hard copies of those documents and resume implementing all requirements of the MOP. As some outputs do not require field work, the consultants can still work virtually and deliver those products in digital format. At the Mid-Term Review (MTR), the Bank agreed with the counterparts on additional measures to expedite implementation.

11. **Mid-Term Review.** The Bank team held a virtual MTR mission from May 25 to 29, 2020. Considering the initial delays of the Project and the new challenges posed by the pandemic, the Bank team assessed the implementation calendar and disbursement projections for the next years; identified critical outputs that needed to be prioritized in order to be completed within the Project timeline; revised results indicators; and, agreed with the PCU, MINAM, and OEFA on several measures to recover the course of execution, including actions to accelerate procurement processes and deliverables review.

12. At the MTR, the Bank team discussed with MINAM, OEFA and the PCU the potential effects of macroeconomic risks to Project implementation. Those risks, which were associated with the economic impacts of the state of emergency, might impact the availability of counterpart funds that cover a substantial portion of the project financing. Therefore, while setting the new implementation schedule at the MTR, the Bank and the PCU considered not only the delays caused by the quarantine and the gradual resumption of activities, but also the eventual reduction of counterpart funds in the event of an economic crisis. The Ministry of Economy and Finance (MEF), MINAM and OEFA stated that no major changes are expected to the Project budget.<sup>7</sup> Given the uncertainty caused by the emergency and its potential economic impacts, the PCU developed the project schedule under three scenarios – with 100 percent of counterpart resources, with 50 percent of said funds, and with 10 percent counterpart resources between January 2021 and June 2022 –, detailing the corresponding modifications in terms of outputs and indicators. Based on the most conservative scenario with only 10 percent of the funding, the Bank agreed on the revised results indicators (see details below).

13. At the MTR, the Bank ratified the waiver to the MOP requirements regarding the presentation and filing of physical documents. Additionally, MINAM and OEFA assigned new focal points to accompany the Project more closely; follow up with their corresponding units on the review of procurement documents and deliverables; and, liaise with other public agencies to expedite environmental and other permits for the laboratory, the data centers and other works. Considering that the laboratory will require the acquisition of highly complex equipment from multiple suppliers and it will be the first of its kind in Latin America and the Caribbean, OEFA proposed to conduct a pre-qualification process to prepone the market study and identify potential bidders, in parallel to the consultancy for the final design of the laboratory. After a thorough analysis of this proposal, the Bank recommended OEFA to issue a call of expressions of interest, rather than a

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<sup>7</sup> MEF and OEFA reiterated this position at the Portfolio Review Meeting held in July 2020.



pre-qualification process, which is more complex and could end up delaying the main selection process. Additionally, to address the recurrent delays of consultants to obtain professional liability insurance – since this type of policy does not exist in Peru –, the PCU will continue to emphasize those requirements in the meetings prior to the presentation of proposals.

14. **New activities in response Covid-19.** At the MTR, MINAM and OEFA ratified their request to add activities to the Project to support the GoP's efforts in response to the pandemic. The Bank agreed on two new activities: (i) development of new modules for the Virtual Environmental Classroom program, focusing on environmental health initiatives to prevent Covid-19 and other infectious diseases, and (ii) studies to improve and expand SIGERSOL, the information system for solid waste management in Peru, including medical waste. MINAM and OEFA completed the terms of references for those consultancies and will start the selection process in December 2020.

15. **Safeguards.** The consulting firm that is designing the laboratory is also preparing the laboratory's Environmental Management Instrument (IGA), necessary to obtain the corresponding Environmental Certification (CA) for construction and operation, as well as to comply with Bank safeguard requirements.<sup>8</sup> The consulting firm addressed the Bank's final comments to the draft IGA. On July 30, 2020, the firm submitted the IGA package to the Ministry of Production and Fisheries (PRODUCE), which is mandated to review and approve the instrument. The Bank team has reviewed this package and provided comments to firm. Once approved, the final version of the IGA will be disclosed in both OEFA's and the Bank's websites. MINAM and OEFA have closely coordinated with PRODUCE to expedite the IGA review and ensure that the CA is issued on time for launching the bidding process for construction. Additionally, MINAM obtained the necessary construction permit for starting the civil works at its headquarters to host both MINAM's and SENAMHI's datacenters. The civil works do not require environmental permits under Peruvian law. As per the Bank's OP 4.01, the terms of reference for those civil works expressly require the contractor to develop an environmental, health and safety management plan prior any construction activity.

16. **Recent developments.** Since the MTR, the Bank has met with OEFA monthly to review the status of each procurement process and contract under execution; the disbursement projections, and other aspects of financial management; and implementation of environmental and social safeguards. When needed, MINAM is also invited to those meetings. In October 2020, the Project Coordinator resigned and OEFA assigned an interim coordinator for the PCU. OEFA expects to complete the selection process for the new coordinator in January 2021, after approval by the Project's Steering Committee. Despite the change of authorities at MINAM in November 2020, the Project is not expected to face additional delays, as the main focal points and technical staff remain in their positions. This will also contribute to smooth handover process when the new coordinator starts their functions. Additionally, on November 28, 2020, the National Congress approved the 2021 Budget Law, which included the counterpart funds needed for the Project in 2021.

### C. Rationale for restructuring

17. Because of the delays in the project implementation, MINAM and OEFA will not deliver some outputs as per the original implementation timeline and, in some cases, will not achieve intermediate results indicators (IRIs) and PDO indicators. For that reason, MINAM and OEFA proposed changes to the results indicators to reflect the revised implementation plan, considering the most conservative scenario for counterpart funds (i.e. 10 percent). The restructuring will also adjust results indicators to (i) clarify the methodology for data gathering and measuring some indicators, and (ii) better reflect the Project's impact on the results, as some original indicators cannot be entirely attributed to the Project. As agreed with MEF, the targets registered in the framework of the national investment system are not affected

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<sup>8</sup> The Environmental Authority required the consultancy firm to develop a Stakeholder Engagement Plan (*Plan de Participación Ciudadana*, PPC) for the approval process of the Environmental Impact Statement (*Declaración de Impacto Ambiental*, DIA). According to the SEP, on January 16 and 17, 2020, the firm consulted key stakeholders, such as representatives of businesses, industry facilities, homeowners' associations and other neighbors, on the draft DIA through a survey form.





(invert.pe). Additionally, the loan agreement will be adjusted to reflect the two new activities agreed with MINAM and OEFA in response to the Covid-19 pandemic.

18. The restructuring will not include other changes to the Project, maintaining the PDO, safeguards category, and the amounts allocated each disbursement category. Considering the proposed adjustments, in line with the provisions set out in paragraph 23, Section III, of the World Bank’s Investment Project Financing (IPF) Policy (2018), a level two restructuring to modify indicators is proposed.

## II. DESCRIPTION OF PROPOSED CHANGES

### A. Proposed changes to indicators and methodology for revising targets

19. At the MTR, the Bank discussed the proposed restructuring with MEF, MINAM, OEFA and the PCU. OEFA formally requested the restructuring in letters dated June 26 and November 18, 2020.<sup>9</sup> The proposed restructuring will comprise the following adjustments to results indicators:

#### Component 1. Improve Environmental Quality Control

20. **PDO Indicator #1 - Analytical parameters accredited by the OEFA laboratory.** Because of delays in Project implementation and additional studies not foreseen during design, the full accreditation process will not be completed within the Project timeframe. By the end of the Project, OEFA will build and equip the laboratory; complete accreditation only for parameters measured by field monitoring equipment; and, start accreditation for all other parameters. Therefore, the revised PDO indicator will reflect only those parameters accredited for field equipment. The revised description is: “This indicator measures the parameters which the OEFA Laboratory is accredited for analyzing through field measurement equipment – i.e. temperature, conductivity, pH, dissolved oxygen, free chlorine and total chlorine. OEFA will pursue the laboratory accreditation for analyzing those parameters before of the International Organization for Standardization (ISO).”

Indicator name	Baseline	Cumulative target values					
		Year 1	Year 2	Year 3	Year 4	Year 5	End Target
<b>ORIGINAL.</b> Analytical parameters accredited by the OEFA Laboratory (Percentage)	0	0	0	0	30	70	70
<b>REVISED.</b> Analytical parameters accredited by the OEFA Laboratory (Number)	0	N/A	N/A	N/A	0	6	6

21. **PDO Indicator #2 – Validated air quality monitoring networks in operation.** The revised target is based on the revised implementation timeline, as well as a possible reduction in counterpart funds. The indicator name remains the same, while the cumulative target values and the end target will be adjusted from 7 to 2 validated networks at Year 5. Each network will comprise a control center and multiple monitoring stations connected to it within a city. MINAM will authorize a third-party – i.e. the consultancy firm that will supervise the final design of the network – to review and certify that both the stations and control center comply with quality assurance and quality control protocols.

Indicator name	Baseline	Cumulative target values					
		Year 1	Year 2	Year 3	Year 4	Year 5	End Target

While processing the proposed restructuring, the Bank identified the need of additional changes to the results indicators. Between August and October, the Bank held additional meetings with OEFA and MINAM to discuss those potential adjustments. The second letter sent by OEFA reflects the final proposal for the restructuring.



<b>ORIGINAL:</b> Validated air quality monitoring networks in operation supported by the project (recommendation 25.1 of the Action Plan for the implementation of the recommendations of the OECD EPR of Peru) (Number)	0	0	1	3	7	7	7
<b>REVISED:</b> Validated air quality monitoring networks in operation supported by the project (recommendation 25.1 of the Action Plan for the implementation of the recommendations of the OECD Environmental Performance Review of Peru) (Number)	0	0	0	0	0	2	2

22. **PDO Indicator #3 - Validated surface water quality monitoring networks in operation.** Although, the indicator name and final target will not change, the revised Project implementation plan requires an adjustment in the cumulative target values. OEFA will set up the water quality monitoring network in Year 5. The network will comprise a control center and multiple monitoring stations connected to it throughout the Rimac river basin. MINAM will authorize a third-party—i.e. the consultancy firm that is supervising the final design of the network – to review and certify that both the stations and control center comply with quality assurance and quality control protocols.

Indicator name	Baseline	Cumulative target values					
		Year 1	Year 2	Year 3	Year 4	Year 5	End Target
<b>ORIGINAL:</b> Validated surface water quality monitoring networks in operation supported by the Project (Number)	0	0	0	1	1	1	1
<b>REVISED:</b> Validated surface water quality monitoring networks in operation supported by the Project (Number)	0	0	0	0	0	1	1

23. **Intermediate Results Indicator (IRI) #1 – ECAs established or revised.** Although MINAM will complete the Project-financed analyses to underpin the new or revised ECAs, the approval of such standards does not depend exclusively on MINAM. To better reflect the actions that are fully under MINAM’s mandate, the new results indicator will refer only to the drafting of a regulatory proposal for new air quality standards for three heavy metals – arsenic, cadmium and chromium.

Indicator name	Baseline	Cumulative target values					
		Year 1	Year 2	Year 3	Year 4	Year 5	End Target
<b>ORIGINAL:</b> ECAs established or reviewed by the Project (Number)	0	0	0	1	1	1	1
<b>NEW:</b> Regulatory proposal of the Environmental Quality Standard (ECA) of air for heavy metals with the support of the project (Number)	0	N/A	N/A	N/A	1	1	1

24. **IRI #2 - LMPs established or revised.** Although MINAM will complete the Project-financed analyses to underpin the new or revised ECAs, the approval of such standards does not depend exclusively on MINAM. To better reflect the actions that are fully under MINAM’s mandate, the new results indicator will refer only to the drafting of regulatory proposals for new LMPs in four sectors: (a) steel and foundries, (b) mining-metallurgical activities, (c) industrial cauldrons, and (d) brickworks.



Indicator name	Baseline	Cumulative target values					
		Year 1	Year 2	Year 3	Year 4	Year 5	End Target
<b>ORIGINAL:</b> LMPs established or revised supported by the project (recommendation 26.2 of the Action Plan for the implementation of the OECD EPR recommendations) (Number)	0	0	2	3	5	5	5
<b>NEW:</b> <i>Regulatory proposal for Maximum Allowable Limits (LMP) with the support of the project (recommendation 26.2 of the Action Plan for the implementation of the OECD EPR recommendations) (Number)</i>	0	N/A	N/A	N/A	4	4	4

25. **IRI #3 - Air quality monitoring stations.** Due to delays in subcomponent 1.2, the final design and installation of air quality monitoring are not expected before the last year of Project implementation. Additionally, because of possible macroeconomic impacts of the pandemic, OEFA may not count with enough counterparts to finance the number of stations originally planned. For those reasons, the cumulative target values and end target of IRI #4 will be revised as follows:

Indicator name	Baseline	Cumulative target values					
		Year 1	Year 2	Year 3	Year 4	Year 5	End Target
<b>ORIGINAL:</b> Functioning air quality monitoring stations established by the project (Number)	0	0	6	16	16	16	16
<b>REVISED:</b> <i>Air quality monitoring stations in operation established by the project (Number)</i>	0	0	0	0	0	6	6

26. **IRI #4 – Water quality monitoring stations.** Due to previously explained delays under the activities if subcomponent 1.2 and especially since the travel restrictions posed by the health emergency, final field visits to define the location of the monitoring stations were not completed. Additionally, considering the conservative scenario of budgetary constraints from the counterpart, OEFA proposed the following adjustments to the indicator, including some precisions in the indicator name.

Indicator name	Baseline	Cumulative target values					
		Year 1	Year 2	Year 3	Year 4	Year 5	End Target
<b>ORIGINAL:</b> Functioning water quality monitoring stations established by the project (Number)	0	0	0	12	19	19	19
<b>REVISED:</b> <i>Water quality monitoring stations in operation (fixed / permanent) established by the project (Number)</i>	0	0	0	0	0	10	10



27. **IRI #5 – OEFA Laboratory.** The construction and equipment of the laboratory are expected to be completed only in the last year of implementation. For this reason, this indicator is being revised to clarify that OEFA will build the laboratory – but not fully establish it – by Year 5 of the project implementation.

Indicator name	Baseline	Cumulative target values					
		Year 1	Year 2	Year 3	Year 4	Year 5	End Target
<b>ORIGINAL:</b> OEFA Lab established (Number)	0	0	0	0	1	1	1
<b>REVISED:</b> OEFA laboratory built and in the process of accreditation of analytical parameters (Number)	0	0	0	0	0	1	1

28. **IRI #6 – Accredited laboratories in compliance with good practices.** The original indicator envisaged that 10 percent of Peru’s accredited laboratories would comply with Good Laboratory Practices. However, this indicator could only be measured after the OEFA’s laboratory is in full operation, which will not happen within the Project timeframe. Therefore, OEFA requested to remove this IRI from the results framework.

29. **IRI #7 – Samples analyzed by OEFA’s laboratory.** The original indicator stated that OEFA’s laboratory would analyze 70,000 samples by Year 4 and 150,000 samples by Year 5. However, as the laboratory will start analyzing samples only after the parameter accreditation – which will not happen within the Project timeframe, except for those six parameters to be measured with field equipment –, OEFA requested to remove this IRI from the results matrix.

**Component 2: Improve Information and Public Participation for Environmental Quality Control**

30. **PDO Indicator #4 - Average user satisfaction score of SINIA.** The original indicator stated that the average of user satisfaction score of SINIA would be increased from 2 (baseline) to 3 in Year 3, and to 4 in Years 4 and 5. However, MINAM explained that the achievement of this indicator cannot be attributed to the Project. Although MINAM has not completed any of the Project-financed activities that will strengthen SINIA, the average score of user satisfaction has increased in the past years and all cumulative target values have been achieved. For this reason, MINAM asked the Bank to remove this PDO Indicator from the results framework.

31. **PDO Indicator #5 - Environmental quality information available through SINIA (aligned to recommendation 7 of the OECD Environmental Performance Review of Peru, 2016).** This indicator refers to the public disclosure by SINIA of environmental monitoring data on air, water and soil quality that are collected from monitoring exercises of public agencies in accordance to 28 ECAs. Those agencies are ANA, Department of Environmental Health (DIGESA), SENAMHI and OEFA. The target refers to the percentage of ECAs covered by the publicly disclosed information. Currently, SINIA disseminates environmental monitoring information of 4 out of 28 parameters (14 percent of existing ECAs). The cumulative and end targets depend on the Project-financed activities to strengthen SINIA that have been postponed, as well as on monitoring activities to be performed OEFA with the new monitoring stations. Considering the delay in the Project implementation and based on the most conservative scenario for the availability of counterpart funds to finance monitoring stations, MINAM requested the Bank to reduce the targets of Years 3 and 4, and the end target, as follows.

Indicator name	Baseline	Cumulative target values					
		Year 1	Year 2	Year 3	Year 4	Year 5	End Target
<b>ORIGINAL:</b> Environmental quality information disclosed through SINIA (aligned	5	5	5	40	70	100	100



to recommendation 7 of the OECD Environmental Performance Review of Peru,2016) (Percentage)							
<b>REVISED:</b> Environmental quality information available through SINIA (aligned to recommendation 7 of the OECD EPR of Peru) (Percentage)	5	5	5	14	14	50	50

32. **New PDO Indicator.** MINAM requested the Bank to add an indicator to the results framework to reflect an increased access of the general public to environmental quality information, which is key to participate in controlling and managing environmental quality. This new indicator refers to the number of user visits to the SINIA webpage and other technological tools developed with the project’s support to disseminate environmental quality data and promote public engagement. Some of these tools will include easy access ways for the citizens to send information (e.g. photos, text and voice messages) directly to SINIA related to environmental quality, using simple mobile technology as well as sophisticated applications. Based on that, the proposed indicator will be set as follows.

Indicator name	Baseline	Cumulative target values					
		Year 1	Year 2	Year 3	Year 4	Year 5	End Target
<b>NEW:</b> Visits to project-supported technological tools for public access to environmental information (Number in thousands)	3,321	N/A	N/A	N/A	4,000	5,600	5,600

33. **IRI #8 - National entities submitting environmental quality information to SINIA.** The indicator refers to five targeted agencies that provide data to SINIA – i.e. MINAM, ANA, DIGESA, SENAMHI and OEFA. MINAM, as the system administrator, uploads information directly to SINIA. For the purposes of this indicator, the other four agencies are expected to sign an inter-operability agreement with MINAM, based on an information sharing protocol, to submit environmental information to SINIA. The state of emergency also affected the consultancy for the final design of the software and interoperability mechanisms to improve the information flow between the agencies that generate the data and SINIA. Currently, only SENAMHI has signed an inter-operability agreement with MINAM.<sup>10</sup> For that reason, MINAM requested the Bank to revise the cumulative target values of Years 3 and 4 as follows.

Indicator name	Baseline	Cumulative target values					
		Year 1	Year 2	Year 3	Year 4	Year 5	End Target
<b>ORIGINAL:</b> National entities submitting environmental quality information to SINIA (Number)	1	1	3	5	5	5	5
<b>REVISED:</b> National entities that share environmental quality information through SINIA (Number)	1	1	3	2	2	5	5

<sup>10</sup> The latest ISR indicated that the target value for this IRI was 8 (eight) in April 2020, referring to all institutions that provide information to SINIA. However, the results indicator should refer only to those 3 (three) national entities – i.e. OEFA, SENAMHI and ANA – that share environmental quality information through SINIA on a regularly basis and through web services.



34. **New IRI #9 - MINAM and SENAMHI data centers in operation with increased and secure storage capacity.** MINAM asked the Bank to reflect the progress made in the datacenters in the results matrix by adding a new indicator. The new IRI refers to a key Project output, as the datacenter will contribute to increase the processing, storage, and information security capacity of MINAM and SENAMHI and, consequently, of SINIA. The proposed indicator will be set as follows.

Indicator name	Baseline	Cumulative target values					
		Year 1	Year 2	Year 3	Year 4	Year 5	End Target
<i>NEW: MINAM and SENAMHI data centers in operation with increased and secure storage capacity (Number)</i>	0	N/A	N/A	N/A	2	2	2

35. **IRI #10 – Public Engagement tools deployed.** MINAM can only develop the public engagement tools after its datacenter is revamped and the interoperability mechanisms are in place. Some of these tools will include easy access ways for the citizens to send information (e.g. photos, text and voice messages) directly to SINIA related to environmental quality using simple mobile technology as well as sophisticated applications. Because of the delays in those activities, MINAM asked the Bank to reduce the targets of Years 3 and 4 as follows.

Indicator name	Baseline	Cumulative target values					
		Year 1	Year 2	Year 3	Year 4	Year 5	End Target
<b>ORIGINAL:</b> Public Engagement tools deployed (Number)	1	1	3	7	7	7	7
<i>REVISED: Technological tools implemented for public access to environmental quality information (Number)</i>	1	1	3	3	3	7	7

36. **IRI #11 – Visits to the Project-supported public engagement platforms.** MINAM asked the Bank to remove this IRI from the results framework and add a similar indicator to measure progress in the PDO outcome to “promote informed public participation in environmental quality management”. MINAM also noticed that the increased number of accesses to SINIA in the past years has occurred without the datacenters and other improvement activities that will be financed by the project. Therefore, the new PDO indicator will consider more ambitious targets (i.e. 5,600 visits, instead of 3,130 by Year 5), to better reflect the project’s contribution to achievement of the indicator.

37. **IRI #12 – Response rate to registered public requests for environmental quality information with SINIA (aligned to recommendation 7 of the OECD Environmental Performance Review of Peru, 2016).** SINIA has already surpassed the end target of a response rate of 70 percent. This is because the Peruvian regulations requires public agencies to comply with specific deadlines for processing and responding to public information requests. For this reason, as the achievement of the indicator cannot be attributed to the Project, MINAM asked the Bank to remove this IRI from the results framework.

38. **IRI #13 - CSO staff trained on public engagement tools.** As the potential constraints in counterpart funds may affect the budget allocated for training activities, MINAM decided to reduce the number of participants, focusing on key operational staff. Additionally, because of the delay in developing the software and engagement tools, MINAM will



conduct the trainings only in the last year of Project implementation. For those reasons, MINAM proposed to reduce the target values as follows.

Indicator name	Baseline	Cumulative target values					
		Year 1	Year 2	Year 3	Year 4	Year 5	End target
<b>ORIGINAL:</b> CSO staff trained on public engagement tools (Number)	0	0	0	200	200	200	200
<b>REVISED:</b> CSO staff trained on public engagement tools (Number)	0	0	0	0	0	40	40

39. **IRI #14 - Officials trained on the use of environmental quality information for informed decision making.** As mentioned, the potential constraints in counterpart funds may affect the budget of training activities. Also, because of the delay in developing the software and engagement tools, MINAM will conduct the trainings only in the last year of Project implementation. For those reasons, MINAM proposed to reduce the target values as follows.

Indicator name	Baseline	Cumulative target values					
		Year 1	Year 2	Year 3	Year 4	Year 5	End target
<b>ORIGINAL:</b> Officials trained in the use of environmental quality information for informed decision-making (Number)	0	0	0	110	110	110	110
<b>REVISED:</b> Officials trained on the use of environmental quality information for informed decision-making (Number)	0	0	0	0	0	20	20

40. **IRI #15 - Software engineers trained on open data and potential uses of such data.** As mentioned, the potential constraints in counterpart funds may affect the budget of training activities. Also, because of the delay in developing the software and engagement tools, MINAM will conduct the trainings only in the last year of Project implementation. For those reasons, MINAM proposed to reduce the target values as follows.

Indicator name	Baseline	Cumulative target values					
		Year 1	Year 2	Year 3	Year 4	Year 5	End target
<b>ORIGINAL:</b> Software engineers trained on open data and potential uses of such data (Number)	0	0	0	50	50	50	50
<b>REVISED:</b> Software engineers and technicians trained on potential uses of open data (Number)	0	0	0	0	0	20	20

**B. New activities**



41. As agreed with MINAM and OEFA, the Bank will add two activities to the Project to support the GoP's efforts in response to the pandemic: (i) studies to improve and expand SIGERSOL, the information system for solid waste management in Peru, including medical waste, and (ii) development of new modules for the Virtual Environmental Classroom program, focusing on environmental health initiatives to prevent Covid-19 and other infectious diseases. Based on that, the Bank will adjust the description of the Project activities in Schedule 1 to the Loan Agreement, including those activities in components 1.3 and 2, respectively.

**III. SUMMARY OF CHANGES**

	Changed	Not Changed
Results Framework	✓	
Disbursement Estimates	✓	
Overall Risk Rating	✓	
Implementing Agency		✓
DDO Status		✓
Project's Development Objectives		✓
PBCs		✓
Components and Cost		✓
Loan Closing Date(s)		✓
Cancellations Proposed		✓
Reallocation between Disbursement Categories		✓
Disbursements Arrangements		✓
Safeguard Policies Triggered		✓
EA category		✓
Legal Covenants		✓
Institutional Arrangements		✓
Financial Management		✓
Procurement		✓
Implementation Schedule		✓
Other Change(s)		✓
Economic and Financial Analysis		✓
Technical Analysis		✓
Social Analysis		✓





Environmental Analysis

✓

**IV. DETAILED CHANGE(S)**

**DISBURSEMENT ESTIMATES**

Change in Disbursement Estimates

Yes

Year	Current	Proposed
2017	0.00	0.00
2018	1,470,000.00	309,000.00
2019	11,100,000.00	1,589,000.00
2020	18,000,000.00	2,933,300.00
2021	9,000,000.00	5,900,000.00
2022	430,000.00	29,270,000.00
2023	0.00	0.00

**SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)**

Risk Category	Rating at Approval	Current Rating
Political and Governance	● Low	● Substantial
Macroeconomic	● Low	● Moderate
Sector Strategies and Policies	● Low	● Moderate
Technical Design of Project or Program	● Moderate	● Moderate
Institutional Capacity for Implementation and Sustainability	● Moderate	● Moderate
Fiduciary	● Substantial	● Moderate
Environment and Social	● Low	● Low
Stakeholders	● Low	● Low
Other		
Overall	● Moderate	● Substantial



**The World Bank**

Peru: Enhancement of Environmental Quality Services (P147342)

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Results framework

COUNTRY: Peru

Peru: Enhancement of Environmental Quality Services

Project Development Objectives(s)

The objective of this project is to generate and share information for environmental quality control at the national level by supporting the Government of Peru to improve its environmental monitoring and analytical capacity, increase public access to environmental quality information, and promote informed public participation in environmental quality management.

Project Development Objective Indicators by Objectives/ Outcomes

Indicator Name	PBC	Baseline	Intermediate Targets					End Target
			1	2	3	4	5	
<b>Objective. 1 Improve Environmental Quality Control</b>								
Analytical parameters accredited for the OEFA laboratory (Number)		0.00	0.00	0.00	0.00	0.00	6.00	6.00
<i>Action: This indicator has been Revised</i>								
Validated air quality monitoring networks in operation supported by the project (recommendation 25.1 of the Action Plan for the implementation of the recommendations of the Peru OECD EPR) (Number)		0.00	0.00	0.00	0.00	0.00	2.00	2.00
<i>Action: This indicator has been Revised</i>								



Indicator Name	PBC	Baseline	Intermediate Targets					End Target	
			1	2	3	4	5		
Validated surface water quality monitoring networks in operation supported by the project (Number)		0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00
<i>Action: This indicator has been Revised</i>									
<b>Objective 2. Improve Information and Public Participation for Environmental Quality Control</b>									
Average user satisfaction score of the National Environmental Information System (SINIA) (disaggregated by sex) (Number)		2.00	2.00	2.00	3.00	4.00	4.00	4.00	4.00
<i>Action: This indicator has been Marked for Deletion</i>									
Environmental quality information disclosed through SINIA (aligned to recommendation 7 of the OECD Environmental Performance Review of Peru, 2016) (Percentage)		5.00	5.00	5.00	14.00	14.00	50.00	50.00	50.00
<i>Action: This indicator has been Revised</i>									
Visits to project-supported technological tools for public access to		3,321.00				4,000.00	5,600.00	5,600.00	5,600.00



Indicator Name	PBC	Baseline	Intermediate Targets					End Target
			1	2	3	4	5	
environmental information (Number (Thousand))								
<b>Action: This indicator is New</b>								

**Intermediate Results Indicators by Components**

Indicator Name	PBC	Baseline	Intermediate Targets					End Target
			1	2	3	4	5	
<b>1. Improve Environmental Quality Control</b>								
LMPs established or revised supported by the project (recommendation 26.2 of the Action Plan for the implementation of the recommendations of the Peru OECD EPR). (Number)		0.00	0.00	2.00	3.00	4.00	5.00	5.00
<b>Action: This indicator has been Marked for Deletion</b>								
Accredited laboratories with Good Laboratory Practice compliance (Percentage)		0.00	0.00	0.00	0.00	0.00	10.00	10.00
<b>Action: This indicator has been Marked for Deletion</b>								



Indicator Name	PBC	Baseline	Intermediate Targets					End Target	
			1	2	3	4	5		
OEFA laboratory built and in the process of accreditation of analytical parameters (Number)		0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00
<b>Action: This indicator has been Revised</b>									
Water quality monitoring stations in operation (fixed / permanent) established by the project (Number)		0.00	0.00	0.00	0.00	0.00	0.00	10.00	10.00
<b>Action: This indicator has been Revised</b>									
Samples analyzed by OEFA laboratory (Number (Thousand))		0.00	0.00	0.00	0.00	0.00	70.00	150.00	150.00
<b>Action: This indicator has been Marked for Deletion</b>									
ECAs established or revised supported by the project (Number)		0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00
<b>Action: This indicator has been Marked for Deletion</b>									
Air quality monitoring stations in operation established by the project (Number)		0.00	0.00	0.00	0.00	0.00	0.00	6.00	6.00
<b>Action: This indicator has been Revised</b>									



Indicator Name	PBC	Baseline	Intermediate Targets					End Target
			1	2	3	4	5	
Regulatory proposal of the Environmental Quality Standard (ECA) of air for heavy metals with the support of the project (Number)		0.00				0.00	1.00	1.00
<b>Action: This indicator is New</b>								
Regulatory proposal for Maximum Allowable Limits (LMP) with the support of the project (recommendation 26.2 of the Action Plan for the implementation of the OECD EPR recommendations) (Number)		0.00				4.00	4.00	4.00
<b>Action: This indicator is New</b>								
<b>2. Information Information Disclosure and Public Participation for Environmental Quality Control</b>								
Technological tools implemented for public access to environmental quality information (Number)		1.00	1.00	3.00	3.00	3.00	7.00	7.00
<b>Action: This indicator has been Revised</b>								



Indicator Name	PBC	Baseline	Intermediate Targets					End Target
			1	2	3	4	5	
National entities that share environmental quality information through SINIA (Number)		1.00	1.00	2.00	2.00	2.00	5.00	5.00
<b>Action: This indicator has been Revised</b>								
Response rate to registered public requests for environmental quality information with SINIA (aligned to recommendation 7 of the OECD Environmental Performance Review of Peru, 2016) (Percentage)		40.00	40.00	40.00	50.00	60.00	70.00	70.00
<b>Action: This indicator has been Marked for Deletion</b>								
CSO staff trained on public engagement tools (Number)		0.00	0.00	0.00	0.00	0.00	40.00	40.00
<b>Action: This indicator has been Revised</b>								
Visits to the project supported public engagement platforms (Number (Thousand))		300.00	750.00	1,230.00	1,730.00	2,260.00	3,130.00	3,130.00
<b>Action: This indicator has been Marked for Deletion</b>								







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