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The World Bank

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Report No: PAD3703

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT PAPER

ON A

PROPOSED ADDITIONAL CREDIT

IN THE AMOUNT OF SDR 142.1 MILLION
(US$200 MILLION EQUIVALENT)

TO THE

ISLAMIC REPUBLIC OF PAKISTAN

FOR THE

SINDH RESILIENCE PROJECT

November 11, 2020

Urban, Resilience and Land Global Practice
South Asia Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective September 30, 2020)

Currency Unit =	PKR
US$ 1 =	PKR 165.55
US$ 1 =	SDR 0.71

FISCAL YEAR
July 1 – June 30

Regional Vice President:	Hartwig Schafer
Country Director:	Najy Benhassine
Regional Director:	John A. Roome
Practice Manager:	Abhas Jha
Task Team Leader(s):	Ahsan Tehsin, Aliya Kashif

ABBREVIATIONS AND ACRONYMS

AF	Additional Financing
ARAP	Abbreviated Resettlement Action Plan
CERC	Contingent Emergency Response Component
CPF	Country Partnership Framework
CPS	Country Partnership Strategy
DMIS	Disaster Management Information System
DSSI	Debt Service Suspension Initiative
ESIA	Environment and Social Impact Assessment
ESMF	Environment and Social Management Framework
ESMP	Environment and Social Management Plan
FM	Financial Management
GBV	Gender-based Violence
GoS	Government of Sindh
GRM	Grievance Redress Mechanism
GRS	Grievance Redress Service
IDA	International Development Association
IFC	International Finance Corporation
IPF	Investment Project Financing
IUFR	Interim Unaudited Financial Report
MIGA	Multilateral Investment Guarantee Agency
MSME	Micro, Small and Medium Enterprises
PDMA	Provincial Disaster Management Authority
PDO	Project Development Objective
PISSC	Project Implementation Support and Supervision Consultant
PREP	Pandemic Response Effectiveness in Pakistan
RAP	Resettlement Action Plan
RPF	Resettlement Policy Framework
SID	Sindh Irrigation Department
SOPs	Standard Operating Procedures
SRP	Sindh Resilience Project

Pakistan

Sindh Resilience Project Additional Financing

TABLE OF CONTENTS

BASIC INFORMATION – PARENT (Sindh Resilience Project - P155350)

Country	Product Line	Team Leader(s)		
Pakistan	IBRD/IDA	Ahsan Tehsin		
Project ID	Financing Instrument	Resp CC	Req CC	Practice Area (Lead)
P155350	Investment Project Financing	SSACD (9364)	SACPK (1539)	Urban, Resilience and Land

Implementing Agency: Sindh Irrigation Department, Provincial Disaster Management Authority, Sindh

Is this a regionally tagged project?
No

Bank/IFC Collaboration
No

Approval Date	Closing Date	Expected Guarantee Expiration Date	Original Environmental Assessment Category	Current EA Category
21-Jun-2016	28-Feb-2022		Full Assessment (A)	Full Assessment (A)

Financing & Implementation Modalities

[ ] Multiphase Programmatic Approach [MPA]	[ ] Contingent Emergency Response Component (CERC)
[ ] Series of Projects (SOP)	[ ] Fragile State(s)
[ ] Performance-Based Conditions (PBCs)	[ ] Small State(s)
[ ] Financial Intermediaries (FI)	[ ] Fragile within a Non-fragile Country
[ ] Project-Based Guarantee	[ ] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made disaster
[ ] Alternate Procurement Arrangements (APA)	[ ] Hands-on, Enhanced Implementation Support (HEIS)

Development Objective(s)

The objectives of the Project are to mitigate flood and drought risks in selected areas and to strengthen Sindh's capacity to manage natural disasters.

Ratings (from Parent ISR)

	Implementation					Latest ISR
	07-Dec-2017	27-Jun-2018	30-Dec-2018	26-Jun-2019	12-Dec-2019	23-Jun-2020
Progress towards achievement of PDO	S	S	S	S	S	S
Overall Implementation Progress (IP)	S	MS	MS	S	S	S
Overall Safeguards Rating	S	S	S	S	S	S
Overall Risk	S	S	S	S	S	M
Financial Management	S	S	S	S	S	MS
Project Management	S	S	S	S	S	S
Procurement	S	S	S	S	S	S
Monitoring and Evaluation	S	S	S	S	S	S

BASIC INFORMATION – ADDITIONAL FINANCING (Sindh Resilience Project Additional Financing - P173087)

Project ID	Project Name	Additional Financing Type	Urgent Need or Capacity Constraints
P173087	Sindh Resilience Project Additional Financing	Restructuring, Scale Up	No

Financing instrument	Product line	Approval Date	
Investment Project Financing	IBRD/IDA	08-Dec-2020	
Projected Date of Full Disbursement	Bank/IFC Collaboration		
28-Aug-2024	No		
Is this a regionally tagged project?			
No			

Financing & Implementation Modalities

[ ] Series of Projects (SOP)	[ ] Fragile State(s)
[ ] Performance-Based Conditions (PBCs)	[ ] Small State(s)
[ ] Financial Intermediaries (FI)	[ ] Fragile within a Non-fragile Country
[ ] Project-Based Guarantee	[ ] Conflict
[ ] Deferred Drawdown	[ ] Responding to Natural or Man-made disaster
[ ] Alternate Procurement Arrangements (APA)	[ ] Hands-on, Enhanced Implementation Support (HEIS)
[✓] Contingent Emergency Response Component (CERC)	

Disbursement Summary (from Parent ISR)

Source of Funds	Net Commitments	Total Disbursed	Remaining Balance	Disbursed
IBRD				%
IDA	100.00	73.69	26.31	74 %
Grants				%

PROJECT FINANCING DATA – ADDITIONAL FINANCING (Sindh Resilience Project Additional Financing - P173087)

FINANCING DATA (US$, Millions)

SUMMARY (Total Financing)

	Current Financing	Proposed Additional Financing	Total Proposed Financing
Total Project Cost	120.00	200.00	320.00
Total Financing	120.00	200.00	320.00
of which IBRD/IDA	100.00	200.00	300.00
Financing Gap	0.00	0.00	0.00

DETAILS - Additional Financing

World Bank Group Financing

International Development Association (IDA)	200.00
IDA Credit	200.00

IDA Resources (in US$, Millions)

	Credit Amount	Grant Amount	Guarantee Amount	Total Amount
Pakistan	200.00	0.00	0.00	200.00
National PBA	200.00	0.00	0.00	200.00
Total	**200.00**	**0.00**	**0.00**	**200.00**

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

[ ] Yes [✓] No

Does the project require any other Policy waiver(s)?

[ ] Yes [✓] No

INSTITUTIONAL DATA

Practice Area (Lead)

Urban, Resilience and Land

Contributing Practice Areas

Health, Nutrition & Population

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

PROJECT TEAM

Bank Staff

Name	Role	Specialization	Unit
Ahsan Tehsin	Team Leader (ADM Responsible)		SSACD
Aliya Kashif	Team Leader	Health	HSAHP
Rehan Hyder	Procurement Specialist (ADM Responsible)	Procurement	ESARU
Noaman Ali	Financial Management Specialist (ADM Responsible)	Financial Management	ESAG1
Babar Naseem Khan	Social Specialist (ADM Responsible)	Social Safeguards	SSAS1
Sana Ahmed	Environmental Specialist (ADM Responsible)	Environmental Safeguards	SSAEN
Abid Khan	Team Member		SACPK
Alessandro Palmieri	Team Member	Dam Safety Expert	SMNWA
Chaudhry Riaz Ahmad Khan	Team Member	Flood Expert	SSACD
Ella Jisun Kim	Team Member		SSACD
Junko Funahashi	Counsel		LEGAS
Masatsugu Takamatsu	Team Member		SSACD
Syed Muhammad Bilal Khalid	Team Member		SSACD
Victor Manuel Ordonez Conde	Team Member		WFACS

Extended Team

Name	Title	Organization	Location

I. BACKGROUND AND RATIONALE FOR ADDITIONAL FINANCING

A. Introduction

1. This Project Paper seeks the approval of the World Bank Board of Executive Directors to provide a credit in the amount of SDR 142.1 million (US$200 million equivalent) for a proposed Additional Financing (AF) for the Sindh Resilience Project (SRP; P155350) to enhance the resilience of the Province of Sindh to natural disasters and public health emergencies. The proposed Additional Financing includes a restructuring to enable investments under the Parent Project to support COVID-19 response and recovery activities. This would entail changes to the Project Development Objective (PDO) and select result indicators. No new safeguards policies are triggered, keeping the safeguards category unchanged.

B. Country Context

2. Pakistan is at a crossroads as it deals with the coronavirus (COVID-19) pandemic. Periodic macroeconomic crises and a low human capital basis have constrained the country's growth prospects. Between FY00–FY19, annual economic growth in Pakistan averaged around 4.3 percent, below the South Asian annual average of 6.2 percent. Low investment in human capital, slow progress of structural reforms, low private investment, and slow export growth, among others, have hindered growth prospects. The country was making good progress in stabilizing its economy and implementing much needed structural reforms. However, the COVID-19 pandemic has had significant negative impacts on the economy. Real GDP growth (at factor cost) is estimated to have declined from 1.9 percent in FY19 to -1.5 percent in FY20, the first contraction in decades, reflecting the effects of COVID-19 containment measures that followed monetary and fiscal tightening prior to the outbreak. Due to significant uncertainty over the evolution of the pandemic, demand compression measures to curb imbalances, along with unfavorable external conditions, Pakistan's near-term economic prospects are subdued. Economic growth is projected to remain below potential, averaging 1.3 percent for FY21–22.

3. In response to the outbreak of COVID-19 in Pakistan, the government announced a fiscal stimulus package of approximately US$7.5 billion[1] (equivalent to 2.6 percent of GDP). This aimed to: (a) support the medical health sector in combatting the spread of the virus and providing relief to those affected; (b) implement social welfare measures to support the poor and vulnerable whose livelihoods have been affected by the economic slowdown and partial lockdowns across the country; and (c) provide stimulus to businesses and industries to protect productive assets during the economic downturn. The financing of the response package comprises approximately US$2.5 billion of additional resources and a re-appropriation from the existing budget. Pakistan has also availed of the Debt Service Suspension Initiative (DSSI) and expects US$1.8 billion to US$2.4 billion in temporary fiscal space due to the debt service standstill during the period May 1 to December 31, 2020 from bilateral creditors, including the G20, and its extension through 2021. The country has committed to use the created fiscal space for additional social, health, or economic spending and follow the disclosure and other requirements of the DSSI.

4. The geographic location and climatic conditions of the Province of Sindh render it vulnerable to

[1] Estimated USD equivalent for PKR 1.2 trillion stimulus package.

various natural disaster events. These include floods, cyclones, earthquakes, droughts, windstorms, tsunamis, and sea intrusion. In addition, the geography, topography, nature of economy, rapid urbanization, and high population levels exacerbate Sindh's vulnerability to natural disasters. Climate projections indicate an increased frequency and intensity in extreme climate events adversely affecting livelihoods, agriculture, forestry, and biodiversity. Sindh is predicted to be the most vulnerable "hotspot" in Pakistan in terms of the impact of temperature and precipitation changes on living standards, with the four most vulnerable districts of Pakistan all located in Sindh—Hyderabad, Mirpur Khas, Sukkur, and Larkana.

5. Sindh includes some of the most drought-prone areas of Pakistan, having suffered three major droughts from 1999 to 2018. The drought and El Niño event from 1999–2002 affected 1.4 million people, 5.6 million heads of cattle and 12.5 million acres of cropped area, triggering the spread of malnutrition-based diseases in the population and food scarcity in the province. Since 2013, Sindh has witnessed severe and constant drought in the arid areas of the province. In 2018, rainfall received in the monsoon season was 69.5 percent below average in Sindh, and eight districts of the province suffered moderate to severe drought conditions. During the drought in Sindh from 2014–18, more than 1,000 children died and 22,000 were hospitalized with drought-related diseases in Tharparkar District. Another El Niño emerged in 2015 causing weaker monsoons over parts of Pakistan, including most of Sindh, and a strong heat wave in June and July 2015, which caused more than 1,200 fatalities from heatstroke and dehydration, mostly in Karachi. In 2019, monsoon-related riverine floods and urban flooding in Karachi led to 63 fatalities.

6. In addition, Sindh is currently managing the impacts of the COVID-19 pandemic, as is the rest of the country. Sindh has the largest number of confirmed COVID-19 cases among provinces in Pakistan to date. Although the authorities have gradually eased most restrictions put in place in April, they continue to enforce highly localized "smart lockdowns" to mitigate against a possible second wave. The persistence of endemic and epidemic spread of infectious diseases, including poliomyelitis and multi-drug resistant typhoid, underline the vulnerability of Pakistan's population to intercurrent disease—exacerbated by a combination of vulnerability to poverty and population mobility. In August 2020, monsoon rains caused widespread flooding in Sindh. The city of Karachi received record rainfall, causing urban floods across the city that led to loss of lives and livelihoods, as well as damage to the city's infrastructure. The Bank is exploring potential financing options from existing and pipeline engagements to support the government's immediate and long-term response to the floods.

7. The 18th Constitutional Amendment mandates health and disaster management as provincial subjects. As a result, the provinces are now leading the action to mitigate the impacts of the ongoing pandemic in coordination with the Federal Government. The Province of Sindh led the country's COVID-19 response by detecting the first infection clusters in Pakistan and imposing strict lockdowns. Despite early detection and swift action, Sindh is projected to bear the brunt of this epidemic due to its demographic and socioeconomic landscape. Sindh is the most urbanized province in Pakistan with more than 50 percent of the population residing in cities. More than half of the urban population resides in high-density informal settlements with limited access to basic health and sanitation services, making them highly vulnerable to pandemic shocks. Moreover, residents of these settlements are mostly employed in unstable and informal jobs, which are likely to be impacted by lockdown policies and the subsequent economic slowdown.

Impact of the COVID-19 Pandemic on the Country Program and Government Response

8. Pakistan has been vulnerable to the impacts of the COVID-19 pandemic due to a weak and chronically underfunded public health system, vulnerability to poverty, and a weakening economy. The COVID-19 pandemic and its containment measures have impacted the delivery of essential health services due to supply chain disruptions and redeployment of health care workers, while restrictions on movement, lost income and fear of infection have kept people away from primary health care facilities. There is likely to be a reversal of the decade-long poverty reduction trend,[2] especially in urban areas, which account for a third of Pakistan's population. Real GDP growth (at factor cost) is estimated to have declined from 1.9 percent in FY19 to -1.5 percent in FY20, the first contraction in decades, reflecting the effects of COVID-19 containment measures that followed monetary and fiscal tightening prior to the outbreak. The pandemic has also exacerbated macroeconomic and fiscal risks as crisis-response expenditures and lower than the targeted tax revenues led to a fiscal deficit (including grants) of 8.1 percent of GDP in FY20, while public debt, including guaranteed debt, increased to an estimated 93.0 percent of GDP by end-FY20. Due to significant uncertainty over the evolution of the pandemic, demand compression measures to curb imbalances, along with unfavorable external conditions, Pakistan's near-term economic prospects are subdued. Economic growth is projected to remain below potential, averaging 1.3 percent for FY21–22.

9. The World Bank Group's engagement in Pakistan is guided by the Country Partnership Strategy (CPS) for fiscal years 2015–20.[3] The CPS, now extended to FY21, is built on four results areas: energy, private sector, inclusion, and service delivery. In response to the COVID-19 pandemic the World Bank Country Team also prepared an Operational Framework aligned with the World Bank Group Crisis Response Approach Paper. The Framework is intended to support Pakistan's response to the crisis and prepare to bounce back stronger and faster. The Framework has four Pillars: (i) protecting lives; (ii) protecting the poor; (iii) protecting livelihoods; and (iv) securing the future. The International Finance Corporation (IFC) Strategy (FY21–24) was delivered in FY20, which focuses on stepping up engagement in critical sectors and opening of new markets by leveraging reforms in the following areas: housing; inclusion (digital/micro, small and medium enterprises [MSMEs]); urban; and energy. The Systematic Country Diagnostic report (SCD) has been finalized and the new Country Partnership Framework (CPF) will be presented to the Board in Q4-FY21. Consultations for the CPF will begin early November 2020.

10. The World Bank Group's ongoing and planned support to Pakistan has been realigned with the government's pandemic response. The World Bank's immediate support included the US$200 million Pandemic Response Effectiveness in Pakistan (PREP) project and repurposing of US$40 million from eight ongoing projects for urgently needed equipment and supplies. Two Development Policy Operations (US$1 billion) supported Pakistan to: (i) enhance human capital accumulation and improve federal safety nets to respond to shocks, including those from COVID-19 pandemic; and (ii) strengthen the fiscal framework, promote growth and transparency. An emergency Program for Results in the Education sector (US$200 million) was approved by the Board on July 31, 2020 along with an emergency project to respond to the

[2] The period between 2001 and 2015 was characterized by an uninterrupted and significant decline in poverty, from 64.3 percent in 2001 to 24.3 percent in 2015. World Bank. 2019 *Pakistan@100: Shaping the Future*.
[3] World Bank. 2014. Islamic Republic of Pakistan: Country Partnership Strategy, 2015–2020 (Report No. 84645-PK) and the Performance and Learning Review (Report No. 113574), June 15, 2017.

locust outbreak and food security.[4] Two human capital projects provided US$236 million to support the response in some of the poorest districts in the country.[5] The hydropower project in Khyber Pakhtunkhwa, approved by the Board on September 23, 2020, supports foundational energy sector investments which are critical to build resilience and support recovery from the effects of the COVID-19 pandemic on the economy.[6]

11. The remaining pipeline for FY21 was revised to frontload investments that support immediate needs as identified by the Framework across the four pillars. Priority is being given to projects with: (i) direct COVID-19 interventions contributing to the pillars of the operational framework; (ii) high likelihood to disburse quickly, within 12 to 24 months; (iii) simplified implementation arrangements; and/or (iv) directly linked to medium-term priorities that increase resilience to exogenous shocks. Preparation of three additional projects which meet the objectives of the Framework and the selectivity criteria above have been prioritized: the Crisis-Resilient Social Protection (CRISP, P174484) which supports COVID-19 related enhancement to the delivery systems for social protection across the country; the Solid Waste Emergency and Efficiency Project (SWEEP, P173021), which mitigates flooding and COVID-19 risks in Karachi; and this Additional Financing (P173087) which contributes to reducing vulnerability to disasters and public health emergencies in Sindh. Three Development Policy Operations are also being prepared this fiscal year to support critical reforms necessary for building back better.[7]

12. IFC has also engaged with banks to provide non-financial services to support their MSME portfolios. This includes risk assessments and stress testing. Going forward, IFC is looking to support MSMEs in key sectors impacted by COVID-19, such as textiles, auto, pharma, and agro-processing through risk sharing facilities and credit enhancement with local banks. IFC is also in discussion with businesses in the manufacturing and infrastructure sectors to support their investment needs in the post-COVID-19 recovery phase. Additionally, IFC has initiated four upstream projects to support Public Private Partnerships (PPPs) in healthcare, water, and access to finance women entrepreneurs, which will provide the necessary impetus for medium term economic recovery. IFC, under its Global COVID-19 facility has approved an increase of US$30 million under existing short-term trade facilities with five banks to support SMEs impacted by the pandemic.

13. The Multilateral Investment Guarantee Agency (MIGA) has continued to support cross-border investors and lenders during these challenging times. MIGA's US$318 million gross outstanding exposure in Pakistan comprises four projects in the manufacturing, finance, and energy sectors. MIGA is monitoring developments in Pakistan, particularly in the energy sector, where the agency is currently supporting two hydropower projects. MIGA's US$6.5 billion fast-track facility to help investors and lenders tackle COVID-19, launched in April 2020, is available to Pakistan but has not yet been utilized.

14. Cross-sectoral coordination is maintained with multilateral and bilateral institutions through forums such as the Development Partner Meetings hosted by the World Bank. Aligned with the Bank's

[4] Actions to Strengthen Performance for Inclusive and Responsive Education Program (P173399), Locust Emergency and Food Security Project (P174314).
[5] Khyber Pakhtunkhwa Human Capital Project (P188309, US$200 million) and Balochistan (P166308, US$36 million) approved June 23, 2020.
[6] Khyber Pakhtunkhwa Hydropower and Renewable Energy Development Project (P163461).
[7] These include: Program for Affordable and Clean Energy (PACE, P174553); Securing Human Investments to Foster Transformation II (SHIFT II, P172628); Second Resilient Institutions for Sustainable Economy program (RISE II, P172648)

initial COVID-19 emergency response, the Asian Development Bank approved a US$300 million emergency assistance loan to strengthen Pakistan's public health response to the COVID-19 pandemic and is also providing US$500 million from its Comprehensive Pandemic Response Option. The International Monetary Fund (IMF) disbursed US$1.4 billion under the Rapid Financing Instrument (RFI) to address the economic impact of the COVID-19 shock. An online Partners Platform managed by the United Nations International Children's Emergency Fund (UNICEF) coordinates additional financing requirements of the government, as articulated in the Pakistan Preparedness and Response Plan (PPRP), which estimates US$595 million in additional external financing requirements for the medical health response.

15. The parent Project and this Additional Financing are aligned with the World Bank's Country Partnership Strategy (CPS) (FY2015–20) and with the twin goals of ending extreme poverty and promoting shared prosperity. They support Results Area 3: 'Inclusion' of the CPS. The activities under this Additional Financing will specifically support the CPS Outcome "Increased resilience to disasters in targeted regions" by increasing technical capacity of government entities and improving key drought mitigation infrastructure. The proposed project in Sindh also supports two cross-cutting themes; the theme on deepening engagement at the province level, while further clarifying the roles between provinces and the local governments, as well as the theme on climate change adaptation and mitigation in public and private sectors. The project is also aligned with the Bank's strategy of identifying and addressing risks associated with disasters and climate change, which may hamper achievement of its twin goals. The proposed interventions under this Additional Financing also support Pillar 1: Saving Lives and Pillar 2: Protecting Poor and Vulnerable of the World Bank Group COVID-19 Crisis Response Approach Paper.

C. Project Background

16. The PDO of the SRP (the parent Project) is to mitigate flood and drought risks in selected areas and to strengthen Sindh's capacity to manage natural disasters. SRP has three components: (a) Component 1—Strengthening Disaster and Climate Risk Management (US$20 million), focusing on key disaster management institutions in terms of strengthening operational systems and capacities at the provincial and district levels through the Provincial Disaster Management Authority (PDMA) Sindh; (b) Component 2—Improving Infrastructure and Systems for Resilience (US$80 million), supporting restoration and improvement of embankments at high risk sites along the Indus river for protection against riverine floods as well as construction of small rainwater-fed recharge dams in drought prone regions in Sindh, by Sindh Irrigation Department (SID); and (c) Component 3—Contingent Emergency Response (US$0 million), which would be activated in the event of a major natural disaster and the government's request to reallocate Project funds to support response and reconstruction.

17. The SRP was approved by the IDA Board of Executive Directors on June 21, 2016 with a closing date of February 28, 2022. It is proposed to extend the closing date to August 28, 2024 (see Section VI: Summary Table of Changes). SRP is financed by an IDA Scale-up Facility (SUF) credit of US$100 million. With the AF of US$200 million, the total Project amount will increase to US$300 million.

D. Parent Project Performance

18. The PDO and Implementation Progress ratings are Satisfactory. The Mid-term Review in

September 2019 concluded that the PDO and Project design remain relevant, with a high level of commitment from the Government of Sindh (GoS). The Project has disbursed 74 percent (US$73.69 million) with 1.5 years of Project life remaining and will fully disburse before the Project closing date. Progress on infrastructure investments for flood and drought risk mitigation is well advanced. All infrastructure contracts have been awarded, including nine flood embankments and 15 small dams worth approximately US$60 million. Eight embankments over 198 km length and four small dams civil works have been completed, and the remaining works are expected to be completed by December 2020, before the current Project closing date of February 2022. With Project cost savings, an additional eight small dams, over and above the originally planned 15 small dams, will be constructed in water scarce areas of the Province. Feasibility studies and detailed designing of the additional eight dams have been completed and procurements initiated. Construction of the additional small dams will be completed by December 2021. Technical assistance and capacity building activities with SID and PDMA Sindh are also progressing well. Key activities related to multi-hazard risk assessment of Sindh, operations and maintenance, development of decision support systems, capacity building of officials, and community-based disaster risk management program have been initiated. The Project has also supported GoS respond to the COVID-19 situation by committing US$10 million from the PDMA component to acquire important medical supplies and equipment. The Project is supporting GoS on data analytics to identify COVID-19 hotspots in Karachi. The Project is also supporting key activities on disaster risk financing (DRF) to enhance the fiscal resilience of Sindh to shocks. Over 4.5 million people have benefitted from improved flood protection infrastructure and small recharge dams in Sindh, 50 percent of whom are women. All major PDO level indicators have either been achieved or are on track to being achieved before the Project closing date. The Financial Management (FM) and Procurement performance of the Project are Satisfactory. The overall rating for Environmental and Social safeguards compliance is also Satisfactory. The Project is also in compliance with all legal covenants.

E. Rationale for Additional Financing

19. The overall investment needs in Sindh for enhancing resilience to natural disasters and public health emergencies are significant and require financing sources in addition to the development funding available with the government. Against a backdrop of rising vulnerability and needs, GoS is under fiscal strain with mounting costs of COVID-19 response coupled with an unprecedented economic slowdown. The situation will make it difficult to maintain current levels of service delivery while constraining new investments required for resilience building and jumpstarting the economy.

20. Prior to COVID-19, the role of Disaster Management Agencies was traditionally focused on natural disasters. But the recent pandemic has highlighted the deep interlinkages between the health sector and emergency response, as well as the need to improve the resilience of health systems. The Project will support integration of PDMA Sindh with the health sector to improve emergency response and resource management during public health emergencies. This will be a pioneering approach in the disaster management paradigm of the country, which can serve as an example for other provinces.

21. The Project will focus on the next generation of requirements for PDMA Sindh including in-house emergency response capability and integration with the health sector. The Project is already supporting PDMA to strengthen its emergency response and disaster management capabilities. Being a relatively new institution, the support from the ongoing Project is mainly focused on institution building

for PDMA. But there are also serious capacity challenges beyond institutional development that need to be addressed; there is no centralized emergency rescue service operating in Sindh which significantly restricts the operational footprint and response capacity of PDMA Sindh. In the urban context, the lack of an emergency service in Karachi, a city of more than 15 million residents, significantly undermines the government's response planning and capacity. The Project will support establishment of Sindh Emergency Service to address this critical gap in disaster and emergency management architecture of the province.

22. Droughts continue to pose a major risk to the province of Sindh affecting the lives and livelihoods of people living in or near drought-affected areas. Despite the interventions made to date, the infrastructure investment needs to address drought risks remain significant. Considering this risk, GoS has undertaken a province-wide assessment of potential sites for small rainwater harvesting dams and weirs. Based on the initial successes and impact of the small dams being financed through SRP, the government has expressed a strong interest in scaling up the small recharge dams activity to deal with the chronic nature and socioeconomic impacts of droughts. A detailed feasibility study of an additional 45 small dams is also being undertaken by the government. The Project is well positioned to support this scale-up through an additional financing. Such a scale-up would enable the Project to have greater development impact and more fully achieve its PDO.

23. Beyond technical aspects and economic assessments, the most convincing evidence of the demand for and effectiveness of small dams for groundwater recharge is provided by several embankments built by local communities across the streams to force water to infiltrate. Those non-engineered earthworks were short-lived, but they served the purpose. The fact that local communities used their limited resources for such a temporary measure demonstrates the demand for and importance of groundwater recharge in those regions of Sindh. The small dams program through SRP was conceived to meet that demand by introducing simple but well-engineered structures. Proper design and construction, along with economy of scale, make the program sustainable. In the absence of such an intervention to increase water availability for vulnerable communities, there would be a high risk of out migration, worsening of health conditions, increasing environmental degradation, declining incomes and social disruption. Areas where dams have been constructed witnessed significant increase in groundwater levels after monsoon rains, leading to improved long-term water security of the adjoining communities.

II. DESCRIPTION OF ADDITIONAL FINANCING

A. Project Development Objective

24. The PDO will be expanded to encompass resilience to not only natural disasters and climatic events, but also other crises and shocks, such as disease outbreaks. While the original PDO is "to mitigate flood and drought risks in selected areas and to strengthen Sindh's capacity to manage natural disasters," the new proposed PDO is "to mitigate flood and drought risks in selected areas and strengthen Sindh's capacity to manage natural disasters and public health emergencies."

B. Project Beneficiaries

25. The Project will contribute to vulnerability and risk reduction within Sindh through a

combination of physical works and capacity building in disaster and public health emergency management. Notably, the proposed Additional Financing will support selected public hospitals in Sindh, to be identified in consultation with Sindh Health Department, in establishing emergency operations plans and procedures for natural disasters and extreme events. In addition, the AF will support the establishment of the Sindh Emergency Service, including the development of operational facilities at six divisional headquarters and seven districts, provision of equipment, and training of personnel. The Project is expected to benefit the entire population of Sindh through these interventions and the enhanced capacity at PDMA Sindh to manage and respond to natural disasters and public health emergencies.

26. The Project will have specific benefits for marginalized rural communities living in the geographical locations served through improved infrastructure developed under the Project. An estimated 750,000 beneficiaries in drought prone areas of Kirthar range hills and the Nagarparkar region of Tharparkar District will directly benefit from the construction of small dams through improved water security. Rural Sindh hosts some of the most marginalized communities of the country with 75 percent of the population living in multidimensional poverty.[8] These communities, dependent mainly on farm economy, suffer from chronic issues of hunger and malnutrition mainly driven by water insecurity. Construction of small dams in these areas will unlock a cascade of economic benefits for these marginalized communities through improved water and food security. Additionally, these dams will also provide protection to communities inhabiting the Kohistan area from flash flooding in the hills of the Kirthar Range. About half of all Project beneficiaries are estimated to be female, based on demographic information available for these areas.

C. Project Description

27. The Project will focus on improving institutional capacities, performance, and preparedness at key agencies responsible for managing disasters and health emergencies in Sindh. In addition, the Project will further contribute towards enhancing resilience to hydro-meteorological disasters, primarily droughts, through physical infrastructure investments.

28. Proposed Changes: Components 1 and 2 of the Project will be scaled up. Component 1 (Strengthening Disaster and Climate Risk Management) will also be restructured to add activities on strengthening PDMA's capacities to manage public health emergencies and its integration with the health sector. In addition, the name of Component 1 will be changed to Strengthening Disaster and Public Health Emergency Management. For Component 2 (Improving Infrastructure and Systems for Resilience), the additional financing will scale up drought mitigation investments in vulnerable areas of the province. The results framework has been updated accordingly. The closing date of the Project is proposed to be extended from February 28, 2022 to August 28, 2024 to ensure enough time for implementation of the proposed additional financing.

D. Project Components

29. The following additional activities and allocations of AF are proposed in the Project's components and subcomponents:

[8] Multidimensional Poverty in Pakistan 2014–15, United Nations.
https://www.undp.org/content/dam/pakistan/docs/MPI/Multidimensional%20Poverty%20in%20Pakistan.pdf

Component 1—Strengthening Disaster and Public Health Emergency Management (US$70 million)

30. This component will strengthen the capacity of Sindh to respond to natural disasters and public health emergencies and increase the resilience of public health systems.

Subcomponent 1.1: Strengthening the Resilience of Health Systems (US$5 million)

31. This subcomponent will strengthen the institutional capacity of Sindh to respond to public health emergencies through: (a) supporting selected public hospitals and health facilities in developing emergency operations plans; (b) carrying out of works and provision of equipment and technical assistance to strengthen the capacity and protocols for mortuary services; (c) supporting development and operationalization of a health surveillance dashboard and integration thereof with Disaster Management Information System; (d) supporting development of a COVID-19 programmatic recovery framework; and (e) development of partnerships with relevant stakeholders. This subcomponent will be building upon and complementing the interventions being undertaken through the Bank-financed PREP project (P173796), which also has a key component focusing on the health sector. It will support selected public hospitals and health facilities to develop emergency operations plans for operational continuity, especially with regards to extreme events such as earthquakes, fires, and floods. It will also strengthen the capacity and protocols for mortuary services in cities to enable safe and ethical management of cadavers in case of a mass fatality event. Further, this subcomponent will develop a Health Surveillance Dashboard housed at PDMA Sindh and digitally linked with hospitals to enable better coordination for public health emergencies in the future. This system will include the following elements:

a. Monitoring of real-time disease and mortality distribution across hospitals in Sindh to enhance health surveillance capabilities.
b. Real-time tracking of occupancy rates in hospitals, along with availability of ventilators and other critical medical equipment, including personal protective equipment (PPE) for healthcare workers, to enable efficient load management of health facilities.
c. Integration of Health Surveillance Dashboard with existing Disaster Management Information System (DMIS) being developed by PDMA Sindh under the parent Project.
d. Development of Standard Operating Procedures (SOPs) and training of health professionals for entering data into the dashboard.

32. In addition, this subcomponent will also support the development of a COVID-19 programmatic recovery framework, with a focus on four key areas: (i) strategy for recovery planning; (ii) institutional set up for post-COVID recovery; (iii) financing mechanisms for recovery; and (iv) strengthening of implementation arrangements for recovery activities. This aligns with and will add to the Project's focus on increasing PDMA Sindh's efficacy in coordinating across a wide range of stakeholders, including the Sindh Health Department. This framework will also strengthen the governance and human capital elements of the public health emergency management activities and enable PDMA Sindh to build longer-term capacities in managing future crises and shocks, in addition to the current COVID-19 pandemic. The subcomponent will also support the development of partnerships with civil society and relevant UN organizations, and engage private sector organizations working in the health sector. The purpose would be to further augment the operational emergency service delivery capacity of existing public health facilities, and to ensure better utilization of equipment purchased under the PREP project. Prevailing

technologies would also be explored to improve response and management of health emergencies.

Subcomponent 1.2: Establishing Sindh Emergency Services (US$60 million)

33. This subcomponent will support operationalization of a unit for emergency services (Sindh Emergency Services) in selected divisional headquarters and selected districts through development of their institutional set up and operational capacities, including enhancement of the operational facilities, training programs, and procurement of vehicles and equipment. These units will be located at six divisional headquarters (Karachi, Hyderabad, Sukkur, Shaheed Benazirabad, Mirpurkhas, and Larkana) and seven districts (Ghotki, Jacobabad, Naushahro Feroz, Sujawal, Karachi Korangi, Karachi Central, and Jamshoro). The emergency service will be modeled after successful emergency services elsewhere in the country and will include dimensions of disaster management to establish a cadre of well-trained and equipped first responders. The service will also specialize in urban search and rescue to respond to natural disasters such as earthquakes, urban flooding, windstorms, as well as man-made disasters. While the operational facilities have already been constructed using GoS resources at divisional headquarters (except in Karachi) this subcomponent will support their operationalization.

Subcomponent 1.3: Project Implementation Support and Technical Assistance to PDMA Sindh (US$5 million)

34. This subcomponent will provide technical and operational assistance to PDMA Sindh for the implementation and management of the Project. This assistance will be provided through consultancy services; incremental operating costs, including engagement of additional short-term resources not available within the department; and Project expenditures in such areas as procurement and financial management systems, grievance redress mechanism (GRM), as well as social and environmental safeguards mechanisms. The cost of the activities that could not be implemented due to repurposing of funds for COVID-19 response from the parent project would also be replenished.

Component 2—Improving Infrastructure and Systems for Resilience (US$130 million)

35. This component will support construction of small rainwater-fed recharge dams in drought prone regions in Sindh. In addition, the component will assist SID towards implementing Project interventions and increasing operational efficiency.

Subcomponent 2.1: Construction of Small Recharge Dams to Address Drought and Flash Flooding Risks (US$124 million)

36. This subcomponent will support the construction of eligible small recharge dams to address drought and flash flooding. Forty-five additional small rainwater-fed recharge dams, less than 10 meters in height, will be constructed in drought prone regions of Sindh including Karachi, Jamshoro, Thatta, Dadu and Tharparkar districts. These small dams will contribute to the recharging of underground aquifers and provision of water to communities during dry periods for agricultural and household uses.[9] Additionally,

[9] Groundwater recharge is accomplished by weirs that cause runoff infiltration into the alluvium aquifer. No permanent water storage takes place, but only temporary ponding during rainfall events. The technique is also called “rainwater harvesting.”

these dams will retain excess water during heavy rainfall conditions to protect communities against seasonal hill torrents and flash floods across the Province. The locations of 45 small dams were strategically selected to maximize the water recharge to the aquifer where farmers and residents are in dire need of water and can pump up water when water level increases through the recharge. Twenty of the small dams will be located in lower Kohistan while 11 will be located in Tharparkar area. Moreover, seven small dams each will be located in upper and central Kohistan area. The SID is sufficiently advanced with preparatory activities for most of the proposed small dams with completed feasibility studies. The envisaged investments are expected to add more than 70,000 acre-feet of water into fresh groundwater aquifers annually, thereby raising the water table from the current depth of approximately 160 feet up to at least 60 feet. These investments will also provide safe drinking water to local communities and livestock and irrigate more than 20,000 acres of arable lands.

Subcomponent 2.2: Project Implementation Support and Technical Assistance to Sindh Irrigation Department (US$6 million)

37. This subcomponent will provide technical and operational assistance to SID for conjunctive water management to mitigate drought risks and for the implementation and management of the Project, including carrying out of a comprehensive study for developing drought risk mitigating strategy. This will be a comprehensive study to develop a strategy for the Province to mitigate drought risks for the next few decades. The study will review the performance of the small dams already in-service using monitoring data to quantify the benefits that farmers and communities have received; and evaluate drought mitigation effectiveness with other options such as construction of larger reservoirs, or other irrigation schemes. The component would also support: (a) incremental operating costs, including recruitment of additional short-term resources not readily available within the Department; (b) consultancy costs—including engagement of Project Implementation Support and Supervision Consultant (PISSC); and (c) expenditures on fiduciary systems, safeguards requirements, and GRM.

Component 3—Contingent Emergency Response (US$0 million)

38. This component will provide an immediate response to an Eligible Crisis or Emergency, as needed. This will support GoS in responding to crises and extreme events.

E. Project Financing

39. The following table provides an overview of the Project's costs by component:

Parent Project		Additional Financing		Project Total (US$ million)
Project Components	IDA Financing	Project Components	IDA Financing	

1.	**Strengthening Disaster and Climate Risk Management**	**20**	**1.**	**Strengthening Disaster and Public Health Emergency Management**	**70**	
1.1	Improving Risk Identification & Using Risk Information for Decision-making	2	1.1	Strengthening the Resilience of Health Systems	5	**90**
1.2	Strengthening Disaster Management Agencies	12	1.2	Establishing Sindh Emergency Services	60	
1.3	Enhancing Fiscal Resilience					
1.4	Project Implementation Support to PDMA Sindh	4 2	1.3	Project Implementation Support and Technical Assistance to PDMA Sindh	5	
2.	**Improving Infrastructure and Systems for Resilience**	**80**	**2.**	**Improving Infrastructure and Systems for Resilience**	**130**	
2.1	Flood Protection Works	37	2.1	Construction of Small Recharge Dams to Address Drought and Flash Flooding Risks	124	**210**
2.2	Construction of Small Recharge Dams to Address Drought and Flash Flooding Risks	34				
2.3	Technical Assistance to Sindh Irrigation Department	4.5	2.2	Project Implementation Support and Technical Assistance to Sindh Irrigation Department	6	
2.4	Project Implementation Support to Sindh Irrigation Department	4.5				
3.	**Contingent Emergency Response**	**0**	**3.**	**Contingent Emergency Response**	**0**	**0**
TOTAL (US$ million)		**100**			**200**	**300**

40. Implementation Arrangements: The Project's implementation arrangements will remain unchanged with PDMA Sindh and SID carrying out Project activities for Component 1 and 2 respectively.

41. Results Framework: With the proposed scale-up of Components 1 and 2, the PDO indicators of the Results Framework will be modified to reflect the additional activities carried out under the Project:

Changes to Project Development Objective Indicators

PDO Indicator	Original Target	Revised Target
I. Direct Project beneficiaries from flood and drought risk mitigation investments in selected areas (Number)	5,065,000	5,750,000
* of which are for floods	5,000,000	5,000,000
* of which are for droughts	65,000	750,000
II. Land area protected through Project interventions from natural disasters (Hectare, Ha)	517,000	550,000
* of which are from floods	510,000	510,000
* of which are from droughts	7,000	40,000

42. In addition, a new PDO indicator was created to track the establishment of the Sindh Emergency Service. New intermediate indicators for the health surveillance dashboard, establishment of a dedicated gender desk at Sindh Emergency Service, and female employment generated by the construction of small dams have also been added. All indicators' target dates align with the new closing in August 2024.

43. Safeguards: The environmental and social safeguards policies triggered will remain unchanged. The OP/BP 7.50 Projects on International Waterways was triggered for the parent Project but is no longer relevant for the AF operation since no work financed by the AF is anticipated on any international water

body. Further details are provided in the appraisal summary.

III. KEY RISKS

44. The overall risk rating for project design and implementation remains Moderate.

45. Political and Governance (Substantial): There continues to be a substantial risk of sudden change to the political landscape in Pakistan, with no notable changes to date, and this political instability creates the risk of a shift or change in government priorities. The political and governance risks remain substantial, but the Project will continue to employ a comprehensive set of mitigation measures, already under implementation, for promoting transparency and strengthening processes, in areas such as prioritization and selection of investments using objective criteria, financial management and reporting procedures, procurement and complaint resolution mechanisms, engaging communities and citizens, operations and maintenance regime for infrastructure assets, and monitoring and evaluation.

46. Macroeconomic (Substantial): Pakistan's macroeconomic risk is high as it emerges from a crisis. The COVID-19 pandemic is projected to impact real economic growth, affect the government's fiscal position, and depress private investment. The global economic impacts of the pandemic remain uncertain. However, the residual risk to the project is considered substantial. This is mainly due to the GoS according the highest priority to addressing the pandemic and reprioritizing resources to COVID-19 mitigation measures. This risk will be mitigated by its monetary policy stance geared towards preserving macroeconomic stability and the support from international financial institutions in enhancing Pakistan's fiscal space for COVID-19 response.

47. Sector Policies and Strategies (Moderate): While the capacity and experience of disaster management authorities at the provincial and district levels was quite limited at the beginning of the Project, it is now in its fourth year of implementation and significant capacity to carry out the Project has been built and demonstrated. The National Disaster Management Plan (NDMP), the National Climate Change Policy and the Pakistan Preparedness and Response Plan for COVID-19 represent the key sector plans from the government that are relevant to this operation. There remains a significant financing gap for the implementation of these plans, which the Project directly addresses.

48. Technical Design of the Project (Moderate): Throughout the four years of implementing the Project, significant capacity has been built within the two implementing agencies to manage the technical complexity of the designed components. The Project will continue to proactively address institutional constraints to effectively plan, mitigate, and respond to natural disasters and public health emergencies, particularly through interventions implemented by PDMA Sindh.

49. Institutional Capacity for Implementation and Sustainability (Moderate): In terms of institutional capacity, SID has adequate capacity and experience in implementing several projects supported by the World Bank. On the other hand, PDMA Sindh will need continued support to bring implementation capacity to the required levels. While the use of regular staff at the implementing agencies is envisaged to ensure a sustainable improvement of institutional capacities, the Project will support the engagement of particular skillsets and specialized resources to augment existing staff to address gaps in implementation capacity. In terms of sustainability of infrastructure developed through

the operation, the Project has focused interventions aimed at improving operation and management practices at SID, which will ensure adequate budgeting and allocation of funds from the government budget for the Operations and Maintenance of infrastructure and assets throughout their design life.

50. Fiduciary (Moderate): The Project is in its fourth year of implementation and the implementing agencies now have significant experience with Bank-financed projects. The fiduciary assessment carried out indicates moderate risk in procurement operations and contract management. The main drivers to the risks are associated with overall operating environment. Proposed residual fiduciary risk remains moderate after implementation of mitigation measures such as internal controls and adequate staffing.

51. Environment and Social (Substantial): In terms of environmental and social risks, the Project will finance the construction of small dams, which may have moderate-to-substantial environmental and social impacts. Therefore, the Project will continue to use a framework approach whereby all subprojects will be screened at the identification stage for their impacts. Subproject-specific Environment and Social Management Plans (ESMP)/Impact Assessments (ESIA) and Resettlement Action Plans (RAP) will be developed upfront if necessary, sent by implementing agencies to the World Bank for review and clearance, and disclosed in accordance with the World Bank's policies. In addition, dedicated environmental and social specialists are already in place in the implementing agencies to manage such risks in compliance with the Environmental and Social Management Framework (ESMF) and in consultation with the World Bank's team.

52. Stakeholders (Moderate): The Project will engage with various government entities and communities and require effective interfaces for institutional coordination and community engagement. A strong community engagement strategy and citizen engagement mechanisms are already in place and will continue to be used to facilitate participation, primarily for infrastructure investments and community-based disaster risk management interventions. In addition, the Project will support strong communication interventions strategy to increase community awareness and improve transparency in Project activities.

53. Other: COVID-19 (Substantial): COVID-19 poses risks that may hamper timely implementation and oversight of operations due to reduced access to some areas and suspended mission travel. As a mitigation measure, the Project will use alternative supervision and monitoring arrangements in case COVID-19 issues constrain access to Project areas, such as third-party monitoring, geo-referenced photography, and videoconferencing with counterparts.

IV. APPRAISAL SUMMARY

A. Economic and Financial (if applicable) Analysis

54. The Project will result in improved and resilient infrastructure, skilled human resources to manage emergencies and disasters, better availability of underground water, increased agriculture output, and reduced risk of deaths and injuries. However, some of these benefits are difficult to quantify as multiplier effects are involved. Although there are very significant gaps in knowledge of the scope and features of the COVID-19 pandemic, it is apparent that one main set of economic effects will derive from increased sickness and death among humans and the impact this will have on the potential output of the

global economy. In the Spanish Influenza pandemic (1918–19) 50 million people died—about 2.5 percent of the then global population of 1.8 billion. The most direct impact would be from increased illness and mortality affecting the size and productivity of the world labor force. One estimate put global decline in labor productivity at 1.4 percent.[10] The loss of productivity as a result of illness, which even during normal influenza episodes is estimated to be 10 times as large as all other costs, will be quite significant. The Project will generate new employment opportunities as well as prevent some loss to labor productivity through improved management of health emergencies.

55. Building of small recharge dams will support economic activity by increasing cropped area through improved underground water availability and irrigation, increased crop yields, and enhanced fodder for livestock. Benefits to the crop sector include enhanced cropped area, increase in crop yield, crop diversification, enhancement of orchards, and increase in plantation. Based on the parent Project, including necessary adjustments, net annual crop sector benefits are estimated at US$13.5 million. Construction of small dams will also increase yield of fodder and crop residue, which will bring improvement for livestock and fisheries estimated at US$0.69 million. Similarly, small dams are expected to bring savings in irrigation costs, which are expected to pay annual benefits of US$0.42 million. The present discounted value of these benefits, net of the operating and maintenance cost (1 percent of construction cost annually), has been calculated over 20 years at US$292 million. Therefore, the net present value of the interventions related to Component 2 are positive and the benefit-cost ratio is estimated at 2.2. Moreover, these social assets are expected to generate positive externalities (the justification of government intervention), which add to the benefits of the Project. For instance, good quality water will be available to the population through ground water source, which is expected to be helpful in eliminating waterborne diseases. Increase in agricultural income in the Project area will also improve the quality of life of people.

B. Technical

56. The COVID-19 situation and the recent floods underline the urgency of the proposed operation. Interventions planned at PDMA to strengthen linkages between health and disaster management authorities are in line with national priorities as envisioned under the COVID-19 Preparedness and Response Plan. The establishment of emergency services is also aligned with similar service delivery mechanisms being undertaken in other provinces. The establishment of dedicated emergency services would enhance GoS response capacity, particularly in urban centers such as Karachi, Hyderabad, and Sukkur, which witness frequent life-threatening accidents, fires, building collapses, as well as natural disasters.

57. SID has experience of constructing small recharge dams, including contracts for engineering design, supervision, and physical works. The site selection for 35 small dams' investment is based on a detailed feasibility study carried out by SID and design consultants, as well as relevant analytical work undertaken during the implementation of the Project, which included review and inputs from an international dam safety expert. The small dams are also a key recommendation of the Sindh Drought Needs Assessment 2019, which indicates that the investments are in line with national and provincial

[10] International Food Policy Research Institute (IFPRI). "*How much will global poverty increase because of COVID-19?"* March 20, 2020.

priorities and agreed with stakeholders.

58. Dam safety assessment: GoS has a large set of feasibility studies, including complete hydraulic and structural designs, developed by qualified engineering consultants for prospective small dams. The available studies, designs, and prospective sites have been reviewed and validated by an international expert during implementation of the Project to ensure that dam safety concerns are adequately and appropriately addressed in these designs.

59. Sustainability: It is critical to ensure sustainability of dam operations beyond the lifetime of the Project to ensure that benefits continue to flow in the future. Based on the successful model of community engagement for infrastructure operations and maintenance under the Water Users Association in Sindh, the Project has supported the development of an Operations and Management strategy particularly for desilting of small dams in collaboration with local communities.

C. Financial Management

60. The financial management responsibilities of this Project will continue to be undertaken by PDMA and SID. The additional financing will be utilized by the same entities and Project Implementation Units (PIUs) for achievements of revised targets. The World Bank conducted an FM assessment of the PDMA and SID components in accordance with the Financial Management Manual for World Bank IPF Operations (OPCS 5.05-DIR.01, issued February 10, 2017). It was concluded that the already operational SRP has adequate FM systems in place that should provide, with reasonable assurance, accurate and timely information on the status and usage of funds as required by the World Bank.

61. FM arrangements of the Project will rely on country systems. GoS budgeting processes will apply, and the Project will be a part of the government's Annual Development Plan (ADP). Project funds will be disbursed into segregated Designated Accounts (DA), which are already operational at the National Bank of Pakistan for receipt of funds from the Bank and making project payments. Disbursements will be report-based where advances equivalent to six-month forecasts will be provided in the DAs. Separate books of accounts will be maintained on cash basis of accounting to record receipts and payments under the Project for the respective components. Internal controls are already enacted in the Project governed by the Project Operations Manual for Project Expenditures. In addition, annual internal audits will also be conducted by a firm of chartered accountants to review the overall fund management process. The Project is using computerized accounting systems to record their transactions, which are also reported to the government as per Revolving Fund Account (RFA) procedure for accounting purposes in the National Financial Management Information System.

62. Both components will prepare Annual Financial Statements (AFS) in accordance with the Cash Basis International Public Sector Accounting Standards (IPSAS) and audited by the Auditor General of Pakistan (AGP). The audited financial statements will be submitted to the Bank within six months of the close of the financial year.

D. Procurement

63. Procurements will be carried out in accordance with the World Bank's Procurement Regulations

for IPF Borrowers for Goods, Works, Non-Consulting and Consulting Services dated July 1, 2016 (revised November 2017 and August 2018). The Project will be subject to the World Bank's Anticorruption Guidelines, dated October 15, 2006, and revised in January 2011 and July 2016. World Bank's Standard Procurement Documents (SPD) shall be used for Open International Competition. Goods, works, and non-consultancy services following Open National Competition shall be procured using Bank's customized standard procurement documents.

64. A simplified Project Procurement Strategy for Development (PPSD) will be prepared by implementing entities with assistance of the Bank. Project procurements will largely cover goods, works, and consultancies (both firms and individuals). However, strengthening the resilience of health systems and establishing Sindh Rescue Service will require procurement of goods and services where existing procurement capacity may need to be supplemented. Procurement responsibility will rest with each of the implementing entities. As per the parent Project, each implementing entity is required to retain a procurement specialist. The Systematic Tracking of Exchanges in Procurement (STEP) system (the Bank's planning and tracking system) will continue to be implemented to prepare and manage the procurement plan and transactions under the Project.

E. Social (including Safeguards)

65. Social risks of the Project remain the same. The Project triggers OP 4.12, Involuntary Resettlement. There are a number of civil works that could potentially include resettlement or temporary relocation of communities. Construction works could also include other impacts on communities and their livelihoods that may require mitigation measures, which are adequately covered in the ESMF of the parent Project. Since the exact sites of sub-projects for additional dams are undecided, the Resettlement Policy Framework (RPF) prepared for the parent Project will apply to new activities as well. This RPF was prepared for SRP and has been disclosed by GoS as part of the ESMF. The Framework identifies the resettlement approach; procedures for screening sites where resettlement is likely to take place; provides guidance on assessing the loss to communities; guidelines on determining compensation and managing relocation; institutional arrangements, and monitoring framework. Two sub-projects under SRP prepared Abbreviated Resettlement Action Plans (ARAPs) after rigorous social screening of the sites. ARAPs were implemented satisfactorily using design modifications.

F. Environment (including Safeguards)

66. Other major environmental impacts associated with new proposed activities are mainly related to civil works. Construction of a building for emergency services in Karachi and construction of small recharge dams may include land acquisition, soil and water contamination from improper disposal of wastes, clogging of existing drainage systems, release of hazardous wastes, noise and dust generation, traffic congestion, and safety risks for construction workers as well as nearby residents and communities, and health risks due to spread of infection in the current situation of COVID-19. In case of small dams, in addition to the construction-related impacts described above, the potential adverse impacts include reduction of surface water flow during the rainy season for lower riparian areas, and possible proliferation of disease-causing vectors such as mosquitos in the water in impoundment areas during the rainy season which may bring diseases such as malaria and dengue. The health and safety risk associated with the ongoing COVID-19 situation during Project implementation at workplaces, and during construction

activities, also exists for the Project.

67. The risk category of the Project remains "A". Since the proposed AF is mainly scaling up of activities of the parent Project with the addition of managing public health emergencies and construction of an emergency rescue service facility in Karachi, the policies triggered for parent Project (OP/BP4.01, OP/BP 4.04, OP/BP 4.12, OP/BP 4.37) are applicable to the AF and the risk category of the Project remains "A". As mentioned earlier OP/BP 7.50 Project on International Waterways was triggered for the parent Project, but is no longer relevant for the AF phase as works on flood embankments of River Indus or any international water body are not in the scope of additional activities being supported through the AF.

68. As per requirement of World Bank Policy OP/BP 4.01, an ESMF exists for the Project. The ESMF includes the guidelines for the new proposed interventions including construction of small dams and emergency rescue service building in Karachi.[11] The government has also prepared SOPs with respect to the ongoing COVID-19 situation to mitigate the health and safety risk associated with transmission of infection during construction activities and at workplaces. The Bank guidance and World Health Organization (WHO) guidelines provided for COVID-19 have been considered while preparing these SOPs. Therefore, the existing ESMF will suffice and no additional safeguard instrument is required for the proposed activities. Site specific ESMPs will be prepared for each intervention as per the guidelines given in the ESMF.

G. Corporate Commitments

Climate co-benefits

69. The province of Sindh is extremely vulnerable to disaster and climate risks, as is outlined in paragraphs 3 and 4 in the Country Context. This Project aims to: (a) mitigate flood risks; (b) mitigate drought risks; and (c) strengthen disaster management capacities. All Project components (dams, capacity building of PDMA Sindh, establishment of search and rescue services, etc.) are intended and have been designed to reduce the aforementioned disaster and climate vulnerabilities and increase the province of Sindh's resilience to natural disasters and climatic events.

Gender

70. The target areas of the Project have some of the lowest development indicators in the province of Sindh. Women are further marginalized by their restricted mobility and participation in local/community decision-making and earning opportunities. Female labor force participation in the construction industry across Pakistan is generally less than 1 percent. Women's access to television, radio, and social media is restricted, depriving them of information and opportunities. As a result, women have low awareness of how to manage their own health and hygiene and consequently have higher risks of physical ill health and low levels of mental well-being. Women do not receive necessary health care. When the basic health care infrastructure is severely damaged or health expenditures are reduced to reallocate public funds to other purposes, obstetrical care is reduced, the number of miscarriages increases, as does maternal and infant mortality.

[11] https://documents.worldbank.org/en/publication/documents-reports/documentdetail/379961468071327827/pakistan-sindh-resilience-project-environmental-assessment-environmental-and-social-management-framework-and-resettlement-policy-framework

71. During and after natural disasters, women face disturbing and negative trends in a variety of ways. Natural disasters on average kill more women than men or kill women at a younger age than men. It depends on both the disaster's strength and the socioeconomic status of women. Women are at increased risk of violence when evacuating to public spaces in natural disasters, and women's voice tends to be excluded from rebuilding and reconstruction efforts. Biological and physiological differences as well as social norms and role behaviors can disadvantage women in the event of natural disasters, for example through discriminatory access to food resources in times of scarcity with a bias against female babies and children.

72. With no dedicated rescue and emergency service delivery present in Sindh, particularly in Karachi, women face further risks from accidents, disasters, and gender-based violence (GBV) in the absence of a response and support regime. The Project will include the following actions:

73. Promotion of women's livelihoods and economic empowerment include the following: At least 15 percent of job opportunities created throughout the lifecycle of small dams activity go to women. Anti-sexual harassment mechanisms would be established at all work sites, including training for all consultant and contractor staff. Women will also have adequate representation on community-level committees to be formed and consulted with during different phases of the small dam lifecycle—from design, construction, water use planning, monitoring, operations, and maintenance—for their suggestions to be incorporated and job opportunities to be provided. SID is also encouraged to hire women planners and engineers to reflect their suggestions into the small dam component of the Project.

74. Emergency service delivery: As part of the emergency and rescue service delivery, a dedicated gender desk would be established to respond efficiently to calls and complaints from women. The rescue service officials will be sensitized and trained on handling complaints related to GBV, including notifying and communicating with authorities. It is important to make sure at least 10 percent of first responders being trained are female so that they can specifically cater to the needs of women. Empowering women to publicly lead and promote gender equitable and universally accessible response, recovery, rehabilitation, and reconstruction approaches is key.

75. Mainstreaming and sensitization: The Project will ensure that any disaster risk management plans and SOPs developed for Sindh are gender-sensitized and adequate budgets are present for implementation of gender activities. Furthermore, all PDMA, rescue services, and medical staff will be provided trainings on gender issues, including GBV.

76. Three indicators will be added in the Results Framework to measure changes in women's agency and reduced vulnerability: (a) percentage of skilled or unskilled labor force employed for small dam lifecycle who are women; (b) establishment of a gender desk under the emergency rescue service; and (c) percentage of first responders being trained are female.

Citizen engagement

77. Citizen engagement will have two mechanisms: (a) the consultation process for the ESIA and RAPs; and (b) the establishment of Project-level grievance redress mechanisms (GRMs) to improve

engagement with Project-affected people (PAP) and communities. Further a communications strategy will be developed both for the establishment of the emergency rescue service as well as health resilience activities. Feedback would be sought from citizens on the improvement of emergency services delivery as well as health services in the context of emergency management.

V. WORLD BANK GRIEVANCE REDRESS

78. Communities and individuals who believe that they are adversely affected by a World Bank supported project may submit complaints to existing project-level GRMs or the World Bank's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the World Bank's independent Inspection Panel, which determines whether harm occurred, or could occur, as a result of World Bank non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate GRS, please visit http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

VI. SUMMARY TABLE OF CHANGES

	Changed	Not Changed
Project's Development Objectives	✓	
Results Framework	✓	
Components and Cost	✓	
Loan Closing Date(s)	✓	
Implementing Agency		✓
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)		✓

VII. DETAILED CHANGE(S)

PROJECT DEVELOPMENT OBJECTIVE

Current PDO

The objectives of the Project are to mitigate flood and drought risks in selected areas and to strengthen Sindh's capacity to manage natural disasters.

Proposed New PDO

The objectives of the Project are to mitigate flood and drought risks in selected areas and strengthen Sindh's capacity to manage natural disasters and public health emergencies.

COMPONENTS

Current Component Name	Current Cost (US$, millions)	Action	Proposed Component Name	Proposed Cost (US$, millions)
Strengthening Disaster and Climate Risk Management	23.75	Revised	Strengthening Disaster and Public Health Emergency Management	93.75
Improving Infrastructure and Systems for Resilience	96.00	Revised	Improving Infrastructure and Systems for Resilience	226.00
Contingent Emergency Response	0.00	No Change	Contingent Emergency Response	0.00
TOTAL	**119.75**			**319.75**

LOAN CLOSING DATE(S)

Ln/Cr/Tf	Status	Original Closing	Current Closing(s)	Proposed Closing	Proposed Deadline for Withdrawal Applications
IDA-58880	Effective	28-Feb-2022	28-Feb-2022	28-Aug-2024	28-Dec-2024

Expected Disbursements (in US$)

Fiscal Year	Annual	Cumulative
2016	0.00	0.00
2017	5,000,000.00	5,000,000.00
2018	10,000,000.00	15,000,000.00
2019	30,000,000.00	45,000,000.00
2020	25,000,000.00	70,000,000.00
2021	35,000,000.00	105,000,000.00
2022	55,000,000.00	160,000,000.00

2023	65,000,000.00	225,000,000.00
2024	65,000,000.00	290,000,000.00
2025	10,000,000.00	300,000,000.00

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

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

LEGAL COVENANTS – Sindh Resilience Project Additional Financing (P173087)

Sections and Description
No information available

Conditions

VIII. RESULTS FRAMEWORK AND MONITORING

Results Framework

COUNTRY: Pakistan

Sindh Resilience Project Additional Financing

Project Development Objective(s)

The objectives of the Project are to mitigate flood and drought risks in selected areas and strengthen Sindh's capacity to manage natural disasters and public health emergencies.

Project Development Objective Indicators by Objectives/ Outcomes

Indicator Name	PBC	Baseline	Intermediate Targets					End Target
			1	2	3	4	5	
Mitigate flood and drought risks in selected areas								
Direct project beneficiaries (Number)		0.00	700,000.00	1,330,000.00	2,613,000.00	4,039,000.00	5,065,000.00	5,750,000.00
Action: This indicator has been Revised								
Female beneficiaries (Percentage)		0.00	50.00	50.00	50.00	50.00	50.00	50.00
Floods (Number)		0.00	700,000.00	1,300,000.00	2,600,000.00	4,000,000.00	5,000,000.00	5,000,000.00
Action: This indicator has been Revised								
Drought (Number)		0.00	0.00	0.00	130,000.00	250,000.00	500,000.00	750,000.00

Indicator Name	PBC	Baseline	Intermediate Targets					End Target
			1	2	3	4	5	
Action: This indicator has been Revised								
Land area protected through project interventions from natural disasters, including: (Hectare(Ha))		0.00	71,500.00	140,000.00	266,400.00	409,200.00	517,000.00	550,000.00
Action: This indicator has been Revised								
Floods (Hectare(Ha))		0.00	71,500.00	1,400,000.00	265,000.00	405,000.00	510,000.00	510,000.00
Action: This indicator has been Revised								
Drought (Hectare(Ha))		0.00	0.00	0.00	1,400.00	4,200.00	12,000.00	40,000.00
Action: This indicator has been Revised								
Strengthen capacity to manage natural disasters and public health emergencies *(Action: This Objective has been Revised)*								
Improved institutional capacity for disaster and climate risk management. (Text)		No SOPs for Sindh disaster fund; limited disaster management plans at sub-national levels.		Emergency Operations Centers (EOCs) set up at PDMA Sindh; Improved flood risk information available for planning.	SOPs for Sindh Disaster Management Fund (SDMF) operationalized.	Emergency Operations Centers (EOCs) set up at DMAs	Integrated disaster management plans adopted by government departments at sub-national levels	Integrated disaster management plans adopted by government departments at sub-national levels.
Action: This indicator has been Revised								
Number of people at risk receiving timely and more		0.00	30,000.00	100,000.00	200,000.00	400,000.00	500,000.00	5,000,000.00

Indicator Name	PBC	Baseline	Intermediate Targets					End Target
			1	2	3	4	5	
accurate early warning notifications. (Number)								
Action: This indicator has been Revised								
Establishment of Sindh emergency service (Text)		No dedicated capacity to respond to emergencies.	No dedicated capacity to respond to emergencies.	No dedicated capacity to respond to emergencies.	No dedicated capacity to respond to emergencies.	Specialized team established in Karachi to respond to disasters and emergencies, including public health emergencies.	Specialized teams established at five Divisional Headquarters of Sindh to respond to disaster and emergencies, including public health emergencies.	Specialized teams established in Karachi and Divisional Headquarters of Sindh to respond to disasters and emergencies, including public health emergencies.
Action: This indicator is New								

Intermediate Results Indicators by Components

Indicator Name	PBC	Baseline	Intermediate Targets					End Target
			1	2	3	4	5	
Strengthening Disaster and Public Health Emergency Management *(Action: This Component has been Revised)*								
Development and adoption of operational procedures for responding to disasters (Text)		Weak planning for few areas			Procedures developed	Procedures operationalized in priority areas.	Procedures operationalized in all areas.	Procedures operationalized in all areas.
Action: This indicator has been Revised								

Indicator Name	PBC	Baseline	Intermediate Targets					End Target
			1	2	3	4	5	
Development of SOPs for Sindh Disaster Management Fund (SDMF) (Text)		No SOPs exist	SOPs developed	SOPs adopted by GoS	SOPs operationalized	SOPs operationalized	SOPs operationalized	SOPs operationalized
Action: This indicator has been Revised								
Number of Risk identification studies completed (Number)		0.00	0.00	1.00	2.00	4.00	4.00	4.00
Action: This indicator has been Revised								
Development of DMIS including Health Surveillance Dashboard (Yes/No)		No	No	No	No	Yes	Yes	Yes
Action: This indicator is New								
Establishment of a dedicated gender desk at emergency rescue service (Yes/No)		No	No	No	No	Yes	Yes	Yes
Action: This indicator is New								
Percentage of first responders employed through the emergency rescue service which are female (Percentage)		0.00	0.00	0.00	0.00	15.00	15.00	15.00
Action: This indicator is New								
Improving Infrastructure and Systems for Resilience								

Indicator Name	PBC	Baseline	Intermediate Targets					End Target
			1	2	3	4	5	
Length of embankments rehabilitated or constructed (Kilometers)		0.00	30.00	60.00	110.00	160.00	200.00	200.00
Action: This indicator has been Revised								
Number of small recharge dams constructed (Number)		0.00	0.00	0.00	0.00	23.00	50.00	68.00
Action: This indicator has been Revised								
Percentage of monitoring wells where annual average water level has increased by 50 percent compared to baseline (Percentage)		0.00	0.00	0.00	20.00	40.00	60.00	80.00
Action: This indicator is New								
Total increase of culturable command area (Hectare(Ha))		0.00	0.00	0.00	10,000.00	30,000.00	50,000.00	80,000.00
Action: This indicator is New								
Percentage increase in the project area population due to in-migration (Percentage)		0.00	0.00		2.00	4.00	8.00	10.00

Indicator Name	PBC	Baseline	Intermediate Targets					End Target
			1	2	3	4	5	
Action: This indicator is New	***Rationale:*** ***This indicator will monitor the inflow of migrants to project areas due to dam construction and water availability.***							
Percentage of respondents in beneficiary surveys reporting an increase in household income (Number)		0.00	0.00	0.00	10.00	20.00	40.00	60.00
Action: This indicator is New								
Establishment of a Decision Support System (DSS) for SID (Yes/No)		No	No	No	Yes	Yes	Yes	Yes
Action: This indicator has been Revised								
Percentage of respondents in Beneficiary Surveys reporting that the public consultation and information sharing process was satisfactory. (Percentage)		0.00		60.00			80.00	80.00
Action: This indicator has been Revised								
Percentage of respondents indicating satisfaction with the timeliness and transparency of the GRM. (Percentage)		0.00	60.00	65.00	70.00	75.00	80.00	80.00

Indicator Name	PBC	Baseline	Intermediate Targets					End Target
			1	2	3	4	5	
Action: This indicator has been Revised								
Percentage of labor force employed for small dam construction who are female (Percentage)		1.00	1.00	1.00	15.00	15.00	15.00	15.00
Action: This indicator is New								

Monitoring & Evaluation Plan: PDO Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Direct project beneficiaries	This indicator measure the amount of people benefiting from the floods and drought risk mitigation infrastructure.	Annual	Design, Feasibility, and Completion Reports; and Progress Reports		Sindh Irrigation Department (SID)
Female beneficiaries					
Floods		Annual	Design, Feasibility, and Completion Reports; and Progress	Based on completion of 9 flood embankments works, which were rehabilitated and strengthened.	Sindh Irrigation Department

			Reports		
Drought	Supplemental Indicator to Number of people protected through project interventions from natural disasters, which provides breakdown of the consolidated indicator value against type of disaster (Drought).	Annual	Design, Feasibility, and Completion Reports; and Progress Reports	The eventual number would be based all completed dams. The current number reflects beneficiaries from 4 completed dams.	Sindh Irrigation Department
Land area protected through project interventions from natural disasters, including:	Assesses the reduction in the land area within Sindh prone to flooding, drought, and other natural disasters as a result of project investments in flood risk mitigation, small recharge dams, and other interventions.	Sindh Irrigation Departmen t	Design, Feasibility, and Completion Reports; and Progress Reports		Annual
Floods	Supplemental Indicator to ⍰⍰Land area protected through project interventions from natural disastersâ⍰⍰, which provides breakdown of the consolidated number against type of disaster (Floods).	Sindh Irrigation Departmen t	Design, Feasibility, and Completion Reports; and Progress Reports	Based on completion of 9 flood embankments works, which were rehabilitated and strengthened.	Annual
Drought	Supplemental Indicator to ⍰Land area protected through project	Sindh Irrigation Departmen	Design, Feasibility, and	The eventual number would be based on all completed dams. The	Annual

	interventions from natural disastersâ, which provides breakdown of the consolidated number against type of disaster (Drought).	t	Completion Reports; and Progress Reports	current number reflects land area benefiting from 4 completed dams.	
Improved institutional capacity for disaster and climate risk management.	Assesses, through an evaluation of institutional coordination mechanisms (before-after analysis), improved institutional capacity of relevant agencies in Sindh on disaster and climate risk management. Benchmarks for improved institutional capacities will be: 1. Development of Disaster Risk Financing Strategy; 2. Emergency Operations Centers set up at PDMA Sindh; 3. Improved flood risk information available for planning; 4. Operationalization of Standard Operating Procedures for Sindh Disaster Management Fund; 5. Emergency Operations Centers set up at District Disaster Management Agencies; 6.	Annual	Institutional Coordination Reviews		PDMA Sindh

	Adoption of Integrated disaster management plans by relevant provincial and local government departments.				
Number of people at risk receiving timely and more accurate early warning notifications.			Project reports of piloting and simulations		PDMA Sindh
Establishment of Sindh emergency service	The indicator will assess the establishment of dedicated emergency rescue service in Karachi	Annual	Annual report, missions		PDMA Sindh

Monitoring & Evaluation Plan: Intermediate Results Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Development and adoption of operational procedures for responding to disasters	This indicator assesses the implementation of operational procedures by relevant disaster management agencies through evaluations in years 4 and 5.		Project Reports		PDMA Sindh
Development of SOPs for Sindh Disaster Management Fund (SDMF)	The indicator would assess the development and adoption by relevant agencies of Standard Operating Procedures for the Sindh Disaster		Project Reports		Provincial Disaster Management Authority, Sindh

	Management Fund, encompassing fiduciary safeguards and controls, and transparent allocation criteria.				
Number of Risk identification studies completed			Project Reports, Analytical outputs		Annual
Development of DMIS including Health Surveillance Dashboard	This indicator will measure the development of a health surveillance dashboard at PDMA Sindh with links to hospitals to enable better coordination for public health emergencies.				PDMA Sindh
Establishment of a dedicated gender desk at emergency rescue service	The indicator will measure the establishment of a dedicated wing within the emergency rescue wing related gender.				PDMA Sindh
Percentage of first responders employed through the emergency rescue service which are female	This indicator will measure the percentage of first responders which are female	Annual	PDMA Sindh	Project reports	PDMA Sindh, Third Party Verification
Length of embankments rehabilitated or constructed	This indicator measures the aggregated length along the Indus with rehabilitated and improved physical defenses to mitigate the risks of		Design, Feasibility and Completion Reports		

	flooding in the adjoining areas.				
Number of small recharge dams constructed	The indicator measures the number of small recharge dams constructed with project funds in water scarce regions within Sindh for ground aquifer recharging.		Design, Feasibility and Completion Reports		Annual
Percentage of monitoring wells where annual average water level has increased by 50 percent compared to baseline	This indicator will report the water level increase as observed in monitoring wells in the vicinity of the small recharge dams.			Weekly and monthly monitoring of ground-water level at recharge dams.	
Total increase of culturable command area				Satellite monitoring can be used for periodic monitoring of culturable command areas. Increase of greener area means the area is good for agriculture and livestock.	
Percentage increase in the project area population due to in-migration					
Percentage of respondents in beneficiary surveys reporting an increase in household income					
Establishment of a Decision Support System (DSS) for SID	This indicator assess the setting up of a Decision Support System at Sindh Irrigation Department to		Project Reports		

	facilitate evidence based decision making for selecting optimal breaching sites, managing flood peaks, etc.				
Percentage of respondents in Beneficiary Surveys reporting that the public consultation and information sharing process was satisfactory.			Beneficiary Surveys		
Percentage of respondents indicating satisfaction with the timeliness and transparency of the GRM.	The indicator measures respondent satisfaction with the Grievance Resolution Mechanism at the complaint registration and resolution stage for each complainant.		GRM Systems		
Percentage of labor force employed for small dam construction who are female	The unit will measure the percentage of female labor force employed for the small dams construction activity	Bi-annual	Missions, annual reports, TPV, beneficiary surveys		SID