



# Project Information Document/ Integrated Safeguards Data Sheet (PID/ISDS)

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Concept Stage | Date Prepared/Updated: 04-Jun-2021 | Report No: PIDISDSC25551

**BASIC INFORMATION****A. Basic Project Data**

Country Pakistan	Project ID P167596	Parent Project ID (if any)	Project Name Sindh Water and Agriculture Transformation Project (SWAT) (P167596)
Region SOUTH ASIA	Estimated Appraisal Date Sep 13, 2021	Estimated Board Date Dec 16, 2021	Practice Area (Lead) Water
Financing Instrument Investment Project Financing	Borrower(s) Islamic Republic of Pakistan	Implementing Agency Sindh Irrigation and Drainage Authority, Sindh Agriculture Department, Sindh Planning & Development Department - Project Coordination and Monitoring Unit	

**Proposed Development Objective(s)**

To increase agricultural water productivity in selected areas of Sindh province and improve water resources management.

**PROJECT FINANCING DATA (US\$, Millions)****SUMMARY**

<b>Total Project Cost</b>	375.00
<b>Total Financing</b>	375.00
<b>of which IBRD/IDA</b>	340.00
<b>Financing Gap</b>	0.00

**DETAILS****World Bank Group Financing**

International Development Association (IDA)	340.00
IDA Credit	340.00

**Non-World Bank Group Financing**



Counterpart Funding	35.00
Local Govts. (Prov., District, City) of Borrowing Country	35.00

Environmental Assessment Category

A - Full Assessment

Concept Review Decision

Track II-The review did authorize the preparation to continue

Other Decision (as needed)

## B. Introduction and Context

### Country Context

- Pakistan is at a crossroads as it deals with the coronavirus (COVID-19) pandemic.** Over the last two decades, economic growth has averaged 4.4 percent a year, below the South Asian annual average of 6.3 percent. The country was making good progress in stabilizing its economy and implementing much needed structural reforms. However, real gross domestic product (GDP) growth (at factor cost) is estimated to have declined from 1.9 percent in FY19 to -1.5 percent in FY20, reflecting monetary and fiscal tightening prior to the outbreak and the effects of COVID-19 containment measures that followed.
- In response to COVID-19, the government announced a fiscal stimulus package of US\$7.5 billion.**<sup>1</sup> This aimed to: (i) support the health sector in combatting and mitigating the virus; (ii) implement social assistance measures for those adversely affected; and (iii) provide stimulus to businesses and industries to protect productive assets. The financing comprises approximately US\$2.5 billion of additional resources and a re-appropriation from the existing budget. Pakistan has availed of the Debt Service Suspension Initiative and expects US\$1.6 billion to US\$2.4 billion in temporary fiscal space.
- Pakistan is facing severe health and economic consequences from the COVID-19 pandemic.** The crisis is expected to lead to a sizeable increase in poverty, reversing the sustained reduction observed over the past 20 years. Deterioration of health indicators is expected due to demand-side issues induced by the crisis, such as lower utilization of non-COVID-19 healthcare due to fear of contagion and income constraints. The pandemic has also resulted in an increase in the number of out-of-school children.
- Pakistan continue to rank low on the human development index and inequality persists.** Rural poverty remains about double urban poverty rates, while decreasing at a significantly slower pace. Much of this can be attributed to the low growth of the agriculture sector, inadequate rural infrastructure and connectivity to markets, weak governance and institutions, and limited access to finance.
- Agriculture contributes one-fifth of national GDP but less than half of this is from irrigated cropping, even though irrigation supports 90 percent of agriculture overall.** The four major crops (wheat, rice, sugarcane, and cotton) contribute less than 5 percent of national GDP but account for 80 percent of all water use. At the same time, Pakistan is among the lowest 10 percent of countries based on its water productivity in agriculture. Further, irrigated agriculture is primarily supported by the complex and expansive Indus Basin Irrigation System (IBIS) which irrigates 17.2 million hectares

<sup>1</sup> Estimated USD equivalent for PKR 1.2 trillion stimulus package.



with a per hectare operations and maintenance cost of US\$102 per year.<sup>2</sup> The Indus Basin Irrigation System (IBIS), which is the backbone of irrigated agriculture in the country, suffers from deferred maintenance, low cost recovery, and poor asset management, underpinned by weak institutions and governance.

6. **Sindh is the second largest province of Pakistan with significant levels of rural poverty.** Sindh has a population of 50.4 million people (23 percent of the population of the country) and generates 27 percent of Pakistan's GDP. Nearly half (48 percent) of Sindh's population lives in rural areas and about 37 percent of the rural population in the province live below the poverty line. Rural poverty strongly correlates with land ownership, and with associated access to assets for agricultural production, including water.

#### Sectoral and Institutional Context

7. **Pakistan's water insecurity is driven largely by poor water management which leads to low economic, social, and environmental outcomes from water use.** Extensive and unproductive water use in agriculture (which accounts for about 94 percent of water withdrawals) is among the primary water-related development challenges that are increasingly exacerbated by population growth and climate change. In Sindh, options for addressing water insecurity are restricted by the province's dependence on the Indus River and the associated Indus Basin Irrigation System for most of its water needs, with irrigated agriculture accounting for the highest withdrawals.

8. **Agriculture remains the backbone of Sindh and about 70 percent of the population depends on the sector.** Surface canal irrigation dominates the sector due to low average rainfall, poor groundwater quality, and dependence on a singular source of freshwater – the Indus river. However, low levels of water-use efficiency and productivity have kept crop yields below the province's potential which impacts its overall economic growth, while also contributing to low incomes, high food prices, and malnutrition. The canal command areas of Sindh are characterized by significant inequities in water access, while over-irrigation and lack of drainage facilities have resulted in high levels of water-logging and salinization. The current performance of the irrigated agriculture sector is attributable to (a) rigid and outdated governance structures that are unable to respond to increasing and changing demands driven by population increase and economic growth and diversification; (b) perverse policy incentives and associated subsidies that favor low value and high water-consumptive crops with benefits skewed towards selected individual farmers at the expense of the economy and the environment; (c) outdated planning assumptions and design decisions in irrigation services that are disconnected from the needs of farmers and the environment; and (d) perpetual stress on both the infrastructure and the natural environment due to the operation of the irrigation system beyond the cropping intensities that it was designed for.

9. **The poor outputs and outcomes from irrigated agriculture are further exacerbated by the lack of appropriate institutional architecture for water resources management and the fate of the Sindh Water Management Ordinance 2002 which to-date has not fully achieved the intended outcomes of improved irrigation service delivery across Sindh.** Furthermore, irrigation and agriculture remain segregated departmental subjects and there is weak interdepartmental coordination. Both departments continue to respond to emerging challenges in their respective sectors on an ad-hoc basis. The Irrigation Department and SIDA investment on the larger water distribution system without due consideration of constraints at farm level, while the Agricultural Department invests into improvements at water course level without due consideration of system constraints that prohibit any meaningful gains at farm level to be achieved.

#### Relationship to CPF

10. **The updated Pakistan Country Assistance Strategy is currently under formulation and is expected to be completed in mid-2021.** The 2020 Pakistan Systematic Country Diagnostic highlights that improving water management is a high priority for Pakistan. Improving the productivity and environmental sustainability of agriculture is identified as one of the key pathways to sustain growth, reduce poverty, and achieve shared prosperity. The relationship of the

<sup>2</sup> FoDP 2012



project to the CPF will be updated based upon the forthcoming CPF.

### C. Proposed Development Objective(s)

11. The PDO is to increase agricultural water productivity and improve water resources management to support rural development and environmental sustainability.

Key Results (From PCN)

12. SWAT is expected to increase agricultural water productivity in project areas, establish a hydro-agro informatics system to aid decision-making by sector managers and policy maker, and support the adoption by Government of Sindh of key planning, legislative, and policy reforms that will improve irrigation services, flood and drought management, agricultural research and extension services, and promote integrated water resources management and high-value environmentally sustainable agriculture.

### D. Concept Description

13. **SWAT is designed on the realization that Sindh can get a lot more economic value and simultaneously increase its social and environmental outcomes from water use.** SWAT will support the Government of Sindh in modernizing and rehabilitating vital irrigation infrastructure and facilitate a transformation in agriculture sector management, water resources management, and irrigation service delivery.

14. **SWAT will support the Government of Sindh embark upon these transformations by using a consistent water-agriculture nexus approach across four components:**

1. **Water Resources Management:** This component will support integrated water resources management in Sindh by supporting policy and institutional reforms, improving planning, and establishing a hydro-agro informatics program that will benefit both water and agriculture sectors. A key policy action associated with this component is the preparation of a comprehensive unified legal framework for irrigation and water resources management.
2. **Water Service Delivery:** This component will improve water services for farmers, cities, and industries. It will finance the construction of infrastructure on the Left Bank of the Indus River and undertake preparatory studies for Right Bank works. It helps to strengthen the Area Water Boards and Farmer Organizations, and finances around 20-40 pilot FO-level integrated agricultural development sub-projects which combine inputs from both SIDA and Agriculture Department, and focuses on conjunctive surface water and groundwater management, combined with climate-smart agriculture technical assistance to improve farmer incomes.
3. **Agricultural Subsidies and Investments:** This component will pilot an “agricultural smart subsidy program” that focuses on small farmers and provides incentives for adopting water thrifty, high value crops. The component will also support improved agriculture research and extension services and value chain development. On-farm water management investments and training in climate smart agriculture will be supported in the same set of FO-level subprojects identified in Component 2.
4. **Project Coordination and Monitoring:** This component provides support to the Project Coordination and Monitoring Unit (PCMU) under the Planning and Development Department. The PCMU is expected to provide overall coordination of project activities to ensure synergy between components.

## SAFEGUARDS



### **A. Project location and salient physical characteristics relevant to the safeguard analysis (if known)**

The project is located in the irrigated areas of Sindh province. The area is characterized by flat lands with inadequate land drainage features. Irrigation returns and drainage effluent are drained either through man-made surface drains or collected in naturally occurring depressions, which are also used as fish ponds. Due to limited drainage, secondary salinization is one of the reasons for land degradation in the province. Extensive irrigation network with inadequate drainage also creates localized waterlogging, another important reason for land degradation. Soils in the province, otherwise, are fertile and very productive. Right bank of the Indus river is generally cultivated with wheat-rice and the left bank is known for wheat-cotton and wheat-sugarcane cropping pattern.

The Indus Delta of Pakistan provides support to diverse ecosystems that range from marshes, creeks and mudflats, to riverine forests, mangroves and lakes. The delta's mangrove ecosystems, seventh largest in the world, are unique in being the only arid mangroves of Asia. However, competing needs of urban and industrial development, agricultural growth and energy production has led to significant reduction of Indus River flows to Indus Delta which led to the rapid decrease of mangrove forests in the coastal areas.

Manchar Lake is the largest freshwater lake in Pakistan located Jamshoro District on the right bank of the Indus river. Manchar Lake is recognized as an important area for waterbirds and fishes. The lake provides the main habitat to the species along with associated natural habitats such as marshes, mudflats, hillocks on sides of lakes and agricultural land. It has been an important site for supporting large concentrations of waterbirds particularly the anatids and the coots as well as the livelihoods of surrounding communities. However, the number of waterbirds has drastically declined overtime due to water contamination since 1921 when disposal of untreated agricultural wastewater through a drain was started.

There are several protected areas, games reserves and wildlife sanctuaries in Sindh. Though civil works are expected to be limited to the areas that are cultivated and irrigated already, any civil work which would be carried out adjacent to the protected areas will be identified during project preparation.

### **B. Borrower's Institutional Capacity for Safeguard Policies**

The project involves multiple Sindh departments that need to work in close coordination, and in some sub-components active collaboration, to target the water-agriculture nexus. The Project Coordination and Monitoring Unit (PCMU) under Planning and Development (P&D) Department of Sindh Province will play an indispensable role in ensuring that this coordination and collaboration takes place. There will be three implementing entity, PCMU, Agriculture Department and Sindh Irrigation and Drainage Authority (SIDA). All three implementing entity have experiences in applying WB Safeguard Policies through implementation of the Bank financed projects. P&D Department has been playing the role of PCMU of Bank financed projects, Sindh Barrages Improvement Project (SBIP) which is currently under implementation and Water Sector Improvement Project (WSIP) which was implemented by SIDA and closed in October 2020. Agriculture Department has been implementing the Bank financed Sindh Irrigated Agriculture Improvement Project and Sindh Agricultural Growth Project. The safeguard capacity of the project will be built upon the experiences and lessons learnt from these Bank financed projects.

PCMU has dedicated environmental and social safeguard specialists. In addition, the task team will review the existing capacity of these implementing entity, and propose necessary capacity enhancement measures on safeguard. Such capacity building measures would include but not limited to hiring the dedicated environmental and social safeguard specialists in the implementing entity, comprehensive environmental and social safeguard training programs particularly focusing on the key environmental and social risks and impacts such as OHS, water quality, labour influx and



management, GBV and involuntary resettlement, and hiring a project management firm.

**C. Environmental and Social Safeguards Specialists on the Team**

Takeaki Sato, Environmental Specialist  
Babar Naseem Khan, Social Specialist  
Najm-UI-Sahr Ata-Ullah, Social Specialist

**D. Policies that might apply**

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	<p>This policy is triggered because the project will involve physical intervention such as adaptation of climate smart technologies and rehabilitation/modernization of main canal infrastructure and distributary systems as well as water and agricultural related policies and plans reform and development which will have an environmental and social implication through the changes in water resources management and allocation, and water management infrastructure. Since the preparation of the Sindh Strategic Water Plan and specialized studies address important environmental related water resources management issues it is proposed the project be classified as Category A.</p> <p>To mitigate the potential environmental and social risks and impacts envisaged from the project, an Environmental and Social Management Framework (ESMF) will be prepared prior to project appraisal as the main safeguard governance document. ESMF will sets out the principles, rules, guidelines and procedures to be followed to prepare the necessary site specific safeguard mitigation measures/instruments, including environmental and social screening which will guide the preparation of site specific mitigation measures/instruments to be required for each physical intervention.</p> <p>The ESMF will outline initial assessment of the environmental and social baseline and potential environmental and social risks and impacts envisaged by the implementation of the project generic environmental and social mitigation measures, public consultation and institutional and monitoring arrangement. Since the preparation of the Sindh</p>



Strategic Water Plan and specialized studies under Component 1 would have environmental and social implications for the long term, the potential environmental and social effects will be evaluated in the process of preparing the plans during implementation.

Component 2 will support the renovation of Akram Wah canal on the left bank of the Indus River. An ESIA will be prepared for Akram Wah prior to appraisal. This component will also support preparatory investment studies (but not investments) for the renovation of main canal on the right bank of the Indus River. These investment preparatory studies will also include ESIA/ESMPs, developed during project implementation, that comply with World Bank policies. Component 2 will also finance the modernization of a number of smaller distributary canals that entail small scale civil works. These distributary canals will be identified during project preparation and subject to requirements of the ESMF, including preparing site specific ESMPs as necessary.

Component 3 includes small-scale works such as on-farm water management investments and which will be addressed through the provisions the ESMF.

A Gender and Inclusion assessment will also be carried out to identify the impacts on women and marginalized groups, and the hurdles faced by these groups to benefit from proposed project interventions. This assessment will also examine available citizen engagement mechanisms from a social inclusion, gender and conflict management perspective to recommend the most effective social mobilization process and engagement for the project. The findings of this assessment will be included in the ESMF to ensure adequate management of gender, vulnerability and social exclusion related impacts, and to strengthen social mobilization and citizen engagement.

Performance Standards for Private Sector Activities OP/BP 4.03

No

The project will be implemented by three governmental agencies.

Natural Habitats OP/BP 4.04

Yes

The river stretch between Guddu Barrage and Sukkur Barrage where Rice and Dadu canals originate is a Sindh Wildlife Reserve and a Ramsar site since the





river stretch is the core habitat of endangered Indus River Dolphin. Rice and Dadu canals are also supplying the water to Manchar Lake, which is the largest freshwater lake in Pakistan.

While most of the canal rehabilitation and modernization works will be undertaken outside these important ecological habitats, the project is required to pay due attention not to harm these ecological habitat. In addition, the outcome of the policy reform, the Strategic Water Plan and specialized studies would affect the quality of these ecological habitats as well as riverine forest in river Indus. Hence, the policy is triggered ESIA/ESMPs of each physical investment will assess the potential impacts and propose mitigation measures following mitigation hierarchy. Likewise, long term ecological impacts due to policy reform, the Sindh Strategic Water Plan and specialized studies will be also assessed in respective technical works.

Forests OP/BP 4.36

TBD

The task team is not aware at this point of any project activities that would affect the riverine forests in Indus River Basin. However, applicability of the policy will be examined during project preparation and determined. If the policy is triggered, detailed impact analysis and necessary mitigation measures will be included in ESIA/ESMPs.

Pest Management OP 4.09

Yes

The project will not procure the pesticides. However, the project would change the pesticides application practice through the project activities such as promotion of CSA, application of new crops and agricultural practices. Therefore, integrated pest management measures will be included in the ESMF.

Physical Cultural Resources OP/BP 4.11

Yes

This policy is precautionarily triggered since project locations are unknown for some of the activities at this point. Potential existence of historical and cultural resources will be examined in the course of project preparation and implementation. A chance find procedure and protection measures of cultural resources will be included in ESMF and site specific ESIA/ESMPs, and will be reflected in the bidding documents for the construction contracts.

Indigenous Peoples OP/BP 4.10

No

This policy is not triggered as the only recognized Indigenous People of Pakistan, the Kailash, reside in the Chitral Valley which is outside the project's geographical area.



The project will involve the renovation of main and minor irrigation canals under Component 2. This includes physical interventions such as canal lining and improving water control structures. These civil works may involve involuntary resettlement, and/or temporary or permanent economic/livelihood displacement as canal right-of-ways in Sindh are often encroached. Hence, OP 4.12 on Involuntary Resettlement is triggered.

As the location of the main canal renovation works along Akram Wah canal under Component 2 is known, a site specific Resettlement Action Plans (RAP) will be prepared that will include corrective actions for people affected by any recent government anti-encroachment activities. This will be consulted upon (involving all stakeholders including local communities and vulnerable groups) and disclosed locally and at the Bank's Imagebank before project appraisal.

Involuntary Resettlement OP/BP 4.12      Yes

The Farmer Organization (FO) subprojects under Component 2 only involve minor canal renovation works. The location of the FO subprojects will be determined during project implementation and will follow a community driven development approach. The project may also involve other small physical interventions such as storage buildings and processing facilities that may require acquisition of private land. A Resettlement Policy Framework (RPF), spanning all subprojects to be financed, will be prepared as part of the Social Management Framework. The RPF will be consulted upon (involving all stakeholders including local communities and vulnerable groups), approved, and disclosed locally and at the Bank's ImageBank prior to project appraisal. If required, site specific RAPs will be prepared during implementation once the design and location of the sub-project interventions are available.

Safety of Dams OP/BP 4.37      Yes

This policy is triggered since project activities rely on the performance of the two major barrages in Sindh, i.e. Sukkur Barrage and Kotori Barrage in Indus River, which are not dams but are large scale hydraulic structures across a river to increase the depth of water and to divert it into canals for irrigation and other purposes. The Government of Sindh has already



established a panel of expert (POE) comprising four members (sediment, structure, hydrology and electro-mechanics specialists), who reviewed and cleared the feasibility study for Sukkur Barrage rehabilitation, which is supported by the Bank financed Sindh Barrage Improvement Project (SBIP). The POE will review the relevant dam safety plans and procedures for Sukkur and Kotri Barrages that are relevant to the project.

Projects on International Waterways  
OP/BP 7.50

Yes

Since Component 2 involves rehabilitation of canals and distributary systems originating from Indus River which is International Waterway, this policy is triggered. Exception of notification set out in Para 7 of OP7.50 would be considered since Component 2 mainly involves rehabilitation and modernization of the canals and distributaries that should not have downstream impacts on other countries. Further analysis will be carried out to determine if the project meets the criteria of exception for riparian notification.

Projects in Disputed Areas OP/BP 7.60

No

The project is not located in a disputed territory. Therefore, this policy is not triggered.

**E. Safeguard Preparation Plan**

Tentative target date for preparing the Appraisal Stage PID/ISDS

Aug 30, 2021

Time frame for launching and completing the safeguard-related studies that may be needed. The specific studies and their timing should be specified in the Appraisal Stage PID/ISDS

The proposed safeguard instruments for the project will be prepared and disclosed prior to Appraisal which is currently planned in September 2021.

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**APPROVAL**

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**Approved By**

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Country Director:	Najy Benhassine	17-Jun-2021