



# Completion Report

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**PUBLIC**

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## Pakistan: Institutional Transformation of the Punjab Irrigation Department to a Water Resources Department

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## TECHNICAL ASSISTANCE COMPLETION REPORT

<b>TA Number, Country, and Name:</b> TA 9255-PAK: Institutional Transformation of the Punjab Irrigation Department to a Water Resources Department		<b>Amount Approved:</b> \$2,500,000.00	
		<b>Revised Amount:</b> Not applicable	
<b>Executing Agency:</b> Punjab Irrigation Department (PID)	<b>Source of Funding:</b> Asian Development Bank (ADB)'s Technical Assistance Special Fund (TASF V) (\$500,000); Japan Fund for Prosperous and Resilient Asia and the Pacific (JFPR) (\$2,000,000)	<b>Amount Undisbursed:</b> \$652,671.28	<b>Amount Used:</b> \$1,847,328.72
<b>TA Approval Date:</b> 5 December 2016	<b>TA Signing Date:</b> 27 December 2016	<b>TA Completion Date</b>	
		<b>Original Date:</b> 31 December 2019	<b>Latest Revised Date:</b> 5 December 2021
		<b>Financial Closing Date:</b> 21 March 2022	<b>Number of Extensions:</b> 1
<b>TA Type:</b> Capacity Development TA		<b>TA Arrangement:</b> Not applicable	

### Description

The Punjab Irrigation Department (PID) is a historical institution. It was established in 1849 mainly to construct and manage irrigation systems to avoid famine, provide essential employment, and expand agricultural production. With increasingly competing demands for water resources from industry and urban sectors, and impacts of water-related disasters, PID recognized its need to evolve into a more comprehensive role of resource manager. Implementing integrated water resource management (IWRM) and disaster risk management (DRM) is challenging and is beyond the capacity of PID in its traditional role of irrigation water delivery and system management. The institutional transformation from sole service provider to a resource manager, requires strategy and vision supported by investments and capacity building. The technical assistance (TA) aimed to review previous reforms and support the PID to transform into a water resources department (WRD) by developing a framework and action plan for institutional transformation. The TA also aimed to contribute to the sustainability of future investment programs through capacity enhancement of the PID. The TA was aligned with ADB's country strategy, 2015–2019 for Pakistan and the Pakistan Vision 2025 which emphasize institutional effectiveness to enhance productivity for water, energy, and food security.

### Expected Impact, Outcome, and Outputs

The TA was aligned with the following impact: increased water and food security and reduced water-related disaster risks through improved water policy and institutions. The TA outcome was the comprehensive management of Punjab's water resources and water-related disaster risks. It was anticipated to be achieved by adopting basin-wide IWRM and DRM principles; and approving a framework to enforce levies, cost recovery, and licensing practices by the Government of Punjab. The TA outputs were (i) the new WRD is functional, and (ii) the capacity of the WRD is enhanced.

### Implementation Arrangements

ADB administered the TA, with PID as the executing agency. The TA became effective on 27 December 2016, with an original completion date of 31 December 2019. An extension of TA completion date to 5 December 2021 was approved on 6 November 2019. This was to cover delays caused by (i) a change of responsibilities for TA implementation within the PID, from the Punjab Irrigation and Drainage Authority to the Strategic Planning and Reform Unit (SPRU); (ii) change of the government after the national elections in 2018; (iii) review of strategic priorities by the new government; (iv) delays in the preparation of the Punjab water policy framework, including the approval of Punjab Water Act; and (v) recurrent changes within PID senior management between 2016 and 2019. The outbreak of COVID-19 also added to the delays. A minor change in implementation arrangement was approved on 24 December 2019 to update the terms of reference (TOR) and restructure the consulting services composition. The TA was originally envisaged to comprise a group of international and national individual consultants as a main TA consultant team, a firm for specialized technical studies, and four individuals for information technologies. The composition was changed to a main consultant team (a firm) and several individual consultants (advisors). The change envisaged closer coordination among various experts. The total estimated person-months (pms) changed from 66 to 33 for international and from 109 to 115 for national consultants. Lumpsum contracts of the services did not record actual pms consumed. A total of 4 international individual consultants and 5 national individual consultants were engaged in 2020 to support Output 1. For Output 2, a consulting firm was engaged and mobilized in August 2020. During implementation, the SPRU was the primary contact to ADB, which facilitated consultations with other units of the PID. ADB and PID held frequent progress review and consultative meetings (in-person and online) during the TA implementation.

### Conduct of Activities

**Output 1:** A new WRD is functional. (Partially Achieved). The Government of Punjab established Water Resources Commission (WRC) and Water Services Regulatory Authority (WSRA) as required by Punjab Water Act 2019. It also approved the establishment of Water Resources Zone under the PID in August 2020. This demonstrates the government's preference for PID to undertake the role of a WRD, rather than establishing a new WRD. These actions were important to start PID's transformation process. In addition, the following activities were completed under the

TA: (i) development of the organizational structure and rules of WRC and WSRA; (ii) development of TOR for Chief Water Resources Zone; and (iii) preparation of guidelines for water abstraction and wastewater disposal licenses, rules for tariff, effluent tariffs, standards for water services and sewerage services regulations, preparation of templates for assignment of services, sub-license to abstract water, disposal of wastewater, and development of canal water reallocation options. These achievements of the TA laid a good foundation for a WRD.

**Output 2:** Capacity of the WRD is enhanced. (Partially Achieved) The TA developed: (i) Punjab Water Vision 2050 and an associated investment plan; (ii) short- to medium-term plan for groundwater management, including aquifer recharge options in Punjab; (iii) water budget at basin and sub-basin level; (iv) design of two pilot projects on managed aquifer recharge; (v) River Basin Management Plan for the province; (vi) water resources information system (WRIS); and (vii) proposal to upgrade the Irrigation Research Institute. PID staff were also trained.

**Japanese Visibility.** The TA implemented several measures to ensure visibility of Japan's support through JFPR: (i) JFPR cofinancing was acknowledged during the meetings; and (ii) JFPR logo was used on all TA reports. Two Japanese experts were recruited in 2017 to apply Japan Aerospace Exploration Agency's technology for WRIS. Their contracts were terminated in 2019 due to prolonged start-up delays in TA implementation while the relevant tasks for the design of WRIS were added in the main consulting firm's TOR.

#### Technical Assistance Assessment Ratings

Criterion	Assessment	Rating
<b>Relevance</b>	The TA is aligned with ADB's Country Partnership Strategy for Pakistan, 2015-2019. This focuses on promoting inclusive growth by supporting infrastructure development in irrigation and efficient water resources management. It is also aligned with Pakistan's National Water Policy (2018). The TA faced start-up delays during the first three years. The TA deliverables were modified to meet the updated requirements of PID senior management without changing the original TA impact, outcome, and outputs. The adjusted deliverables also led to a coherent results chain with innovative ideas such as IWRM planning, water reallocation and groundwater recharging, which are likely to lead to structural transformative effects for improved resource management. The TA addressed ADB's corporate priorities supporting DMCs on challenges such as institutional transformation.	Relevant
<b>Effectiveness</b>	The TA was less than effective because the outputs and outcome were only partially achieved. A two-year TA implementation period under the new Punjab water policy framework (refer to efficiency section), enabled the TA to produce several deliverables to strengthen the transformation of the PID to a WRD. However, at TA completion, the PID was still not fully functional as a WRD. This is despite the enabling conditions for supporting a functional WRD being established.	Less than effective
<b>Efficiency</b>	This TA was less than efficient. While the TA was approved in December 2016, it faced significant start-up delays (until December 2019). This was during the government's formulation of the National Water Policy, Punjab Water Policy, and the Punjab Water Act. The PID awaited government approval of the Punjab Water Act and Punjab Water Policy to restart the TA. The TOR of the TA consultants were adjusted to align closely with the new water-related policy framework of Punjab. Most of the targets were achieved or partially achieved with an underutilized budget at 73.89% despite the major implementation period overlapping with the outbreak of COVID-19 pandemic.	Less than efficient
<b>Overall Assessment</b>	Overall, the TA was less than successful. Although the TA was less than effective and less than efficient because of the 3 years delay and partially achieved outputs and outcome, the TA provided substantial guidance for the PID to continue with its reform agenda. The TA was significantly challenged on implementation progress but managed to deliver on key elements. Specifically, these include the structure and business rules of WRC, WSRA, and Chief Water Resources Zone which support the government's transformation process.	Less than successful
<b>Sustainability</b>	This TA is likely sustainable. The reports and other deliverables that were produced under the TA support the institutional sustainability of the transformation of the PID to a WRD. The WRC and WSRA establishment initiated PID's transformation process. The PID recognizes that transformation is a continuing process and would require time. The Government of Punjab and PID have demonstrated their commitments by (i) undertaking upfront actions including formulation of the Punjab Water Policy and the Punjab Water Act in advance of the TA implementation, (ii) approval of the organizational structure and business rules of WRC and WSRA, and (iii) approval of the establishment of Chief Water Resources Zone.	Likely sustainable

### Lessons Learned and Recommendations

Design and/or planning	The TA is consistent with ADB's country partnership strategy, 2015–2019 for Pakistan. The TA scope and output indicators were overly ambitious. Establishment of a new department requires inputs and/or approvals from higher authorities and external institutions, such as the government of Punjab and its relevant departments and agencies. The TA has covered various disciplines, such as legal, social, institutional, irrigation, drainage, hydrology, and hydrogeology, etc. The DMF included activities that were beyond PID's decision-making capacity. For example, "the endorsement of new WRD." In future, ADB may consider supporting activities where the executing agencies are fully responsible for the proposed institutional reform. The DMFs may include targets that can be met by the executing agency or, are realistically framed in terms of the time required if other agencies are to be involved.
Implementation and delivery	Engaging individual consultants for Output 1 and a team of consultants from the firm for Output 2 was an efficient combination overall. Timely engagement of individual consultants helped respond to the PID's needs and resulted in timely deliverables for Output 1. For output 2, a large consultant consortium comprising 4 firms, was engaged to accomplish multidisciplinary tasks. While the overall coordination was appropriate, there were challenges caused in communication across the TA consultant team, individually engaged consultants, PID, and ADB. For future similar TAs, separate firms could be engaged for technical and institutional aspects.
Management of staff and consultants	Overall management of staff and communication among ADB, PID, and the consultants was conducive although there were challenges under the COVID-19 pandemic. The approved minor change in implementation arrangement simplified consultant composition. The nature of the TA required PID's high ownership and coordination with various departments. Future similar TAs could establish a working committee in the implementation arrangement.
Knowledge building	International and domestic movement restrictions under the COVID-19 pandemic restricted in-person interaction between the PID and the TA consultants. Workshops and meetings were limited to being virtual. The TA consultants produced valuable reports that will enhance PID's knowledge. They included reports on institutional analysis, canal water allocation, managed recharge options, and river basin management. ADB may consider facilitating a national workshop to share the information with a broader audience.
Stakeholder participation	The project's stakeholders included external agencies outside the PID. The TA encountered challenges in engaging these external stakeholders. The agencies did not comment on the consultants' reports. For future TAs, an interdepartmental steering committee may be formed to conduct meaningful consultations with all stakeholders.
Partnership and cofinancing	This TA was financed by JFPR on a grant basis and administered by ADB. The PID offered in-kind contribution with estimated value of \$100,000 in the form of counterpart staff, access to data, and use of PID facilities. Cofinancing leveraged resources for better and improved value for money for all parties.
Replication and/or scaling up	Institutional reform requires strong commitment and ownership from the proponent. While this TA is replicable in other provincial irrigation departments of Pakistan, the level of commitment and enabling conditions would be important for a tailored and stepwise approach. Provincial capacity to deliver such a TA would also need to be considered. The lessons learned from this TA will facilitate future design development.
Post-TA financial resource	One of the deliverables is an investment program for the PID. The PID will evaluate, estimate cost, prioritize, and seek financial resources to support its implementation. ADB will follow up with this deliverable in consultation with the PID, reassess cost implications, and prioritize suitable investments.

### Follow-up Actions

ADB needs to (i) provide support to the PID to synthesize knowledge and information contained in several deliverables of the TA; (ii) discuss with the PID and other departments concerned to prioritize the investment program for ADB and other development partners' financing; and (iii) support the PID to continue and complete the transformation required for IWRM. Subsequent support to PID's transformation could be included in longer-term support, including ADB financed transaction technical assistance facility,<sup>1</sup> and the proposed multitranches financing facility for longer-term engagement.

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<sup>1</sup> ADB. 2021. *Technical Assistance to the Islamic Republic of Pakistan for Preparing Climate-Resilient Agriculture and Natural Resources Development Projects*. Manila.

## DESIGN AND MONITORING FRAMEWORK

<b>Impact:</b> Increased water and food security, and reduced water-related disaster risks through improved water policy and institution. ( <i>Medium-Term Development Framework, 2015-2018; Pakistan Vision 2025</i> ) <sup>a</sup>		
<b>Results Chain</b>	<b>Performance Indicators with Targets and Baselines<sup>1</sup></b>	<b>Achievements</b>
<b>Outcome</b> Comprehensive management of Punjab's water resources and water-related disaster risks	By 2022: a. Adoption of basin-based IWRM and water-related disaster risk management approaches by the new WRD (2015 baseline: none)  b. Approval of an act to enforce levies, cost recovery, and licensing practices by the Government of Punjab (2015 baseline: none)	<b>Partially achieved.</b> The Punjab Water Policy and Water Act, endorsing IWRM and DRM was approved in 2018 and 2019 by the Government of Punjab. However, WRD was not established or PID is yet to be fully functioned as a WRD.  <b>Achieved.</b> The Punjab Water Act 2019 was enacted in December 2019.
<b>Outputs</b> 1. New WRD is functional	1a. Organizational structure, policy and planning, business rules, licensing and cost-recovery mechanisms, and agreed transformation plan for the new WRD are available by Q1 2021 (2015 baseline: none)  1b. The Government of Punjab endorses the new WRD starting in Q3 2021 (2015 baseline: none)  1c. Budget allocated to the new WRD for FY2023 by Q2 2022 (2015 baseline: none)  1d. Newly recruited staff comprising up to 30% women by Q2 2021 (2015 baseline: none)	<b>Partially achieved.</b> The organizational structure and business rules of WRC and WSRA; establishment of Chief Water Resources Zone; licensing, cost-recovery mechanisms, standards and specifications were completed and approved in 2020 and 2021 respectively by the Government of Punjab. WRC, WSRA and Water Resources Zone are essential to function as a WRD.  <b>Not achieved.</b> A new WRD has not been established, while progress was made for PID to function as a WRD. Chief Water Resources Zone under the PID was approved by the Government of Punjab in 2020 and WRC and WSRA in 2020.  <b>Not achieved.</b> WRD is not yet established.  <b>Not achieved.</b> WRD is not yet functional.
2. Capacity of the WRD is enhanced	2a. Punjab's Water Vision 2030 launched by Q4 2021 (2015 baseline: none)  2b. WRIS and its operation manual available by Q4 2021 (2015 baseline: none)	<b>Partially Achieved.</b> Draft Water Vision 2050 and Investment Plan for Punjab were prepared. Further stakeholder consultation is required prior to finalization.  <b>Substantially achieved.</b> A report on design and implementation of WRIS and an operational manual for WRIS were prepared.

<sup>1</sup> The targeted timeline in the design and monitoring framework was revised together with the approval of the minor change in implementation arrangements in December 2019.



Results Chain	Performance Indicators with Targets and Baselines <sup>1</sup>	Achievements
	2c. At least 50 staff (including women) from the WRD trained on governance, IWRM, water-related disaster risk management, information and communication technologies, remote sensing, and geographic information systems by Q4 2021 (2015 baseline: none)	<b>Substantially achieved.</b> 89 PID staff (of which 9 are women <sup>b</sup> ) were trained on groundwater management, IWRM, and river basin management.

#### Key Activities with Milestones

##### 1. New WRD is functional.

- 1.1 Recruit and mobilize consultants. (February 2017 to August 2020)
- 1.2 Develop WRD plans, including organizational structure. (Completed in December 2019)
- 1.3 Support the Government of Punjab's approval process, including FY2020 budget for new WRD. (Not completed. WRD is not yet functional.)
- 1.4 Recruit new staff for WRD. (Not completed. WRD is not yet functional.)

##### 2. Capacity of WRD enhanced

- 2.1 Develop WRD's capacity building plan. (Completed in November 2021)
- 2.2 Deliver training programs. (Completed in November 2021)
- 2.3 Develop WRIS and draft operations manual. (Completed in November 2021)
- 2.4 Draft Punjab's Water Vision 2030. (Completed in November 2021)
- 2.5 Start processing of technical assistance loan. (A project readiness financing was approved in December 2019 for preparing Punjab Water Resources Management Projects)

#### Actual Inputs

ADB: \$269,322.15

Japan Fund for Prosperous and Resilient Asia and the Pacific (formerly Japan Fund for Poverty Reduction, JFPR): \$ 1,578,006.57

Government of Punjab: \$100,000 (estimated in-kind contribution from the government in the form of counterpart staff, office space and field accommodation, secretariat assistance, use of PID's facilities, access to data, and other in-kind contribution).

ADB = Asian Development Bank, DRM = disaster risk management, IWRM = integrated water resources management, PID = Punjab Irrigation Department, Q = quarter, WRC = Punjab Water Resources Commission, WRD = Water Resources Department, WRIS = water resources information system, WSRA = Water Services Regulatory Authority

<sup>a</sup> Government of Punjab, Planning and Development Department, 2015. *Medium-Term Development Framework, 2015-2018*. Lahore; Government of Pakistan, Ministry of Planning, Development and Reform. 2015. *Pakistan Vision 2025 One Nation – One Vision*. Islamabad.

<sup>b</sup> Technical staff with post-graduate qualifications, with a potential to rise to supervisory or managerial positions in future.

Source: Asian Development Bank

**TECHNICAL ASSISTANCE COST****Table A2.1: Technical Assistance Cost by Activity**  
(\$)

Item	Amount <sup>a</sup>	
	Original <sup>b</sup>	Actual
1. Consultants	1,905,600.00	1,845,229.72
2. Goods	57,500.00	0.00
3. Training, seminars, and/or conferences	125,000.00	2,099.00
4. Surveys	150,000.00	0.00
5. Miscellaneous TA administration	21,800.00	0.00
6. Contingency	240,100.00	0.00
<b>Total</b>	<b>2,500,000.00</b>	<b>1,847,328.72</b>

<sup>a</sup> Financed by ADB's Special Technical Assistance Funds (TASF V) \$500,000 and Japan Fund for Prosperous and Resilient Asia and the Pacific (formerly Japan Fund for Poverty Reduction, JFPR) \$2,000,000.

<sup>b</sup> Original estimated cost in the TA report.

Source: Asian Development Bank

**Table A2.2: Technical Assistance Cost by Financiers**  
(\$)

	Technical Assistance Special Fund	Japan Fund for Prosperous and Resilient Asia and the Pacific	Total Cost
1. Original	500,000.00	2,000,000.00	2,500,000.00
2. Actual	269,322.15	1,578,006.57	1,847,328.72
3. Unused	230,677.85	421,993.43	652,671.28

Source: Asian Development Bank.