



# Concept Paper

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Project Number: 46528-001  
June 2013

## Proposed Loan Pakistan: Jalalpur Irrigation Project

Asian Development Bank



## **CURRENCY EQUIVALENTS**

(as of 20 June 2013)

Currency unit	–	Pakistan Rupee (PKR)
PKR1.00	=	\$0.0101
\$1.00	=	PKR98.80

## **ABBREVIATIONS**

ADB	–	Asian Development Bank
CCA	–	cultivable command area
EA	–	executing agency
EIA	–	environmental impact assessment
EIRR	–	economic internal rate of return
EMP	–	environmental management plan
FO	–	farmer organization
GRM	–	grievance redress mechanism
IEE	–	initial environmental examination
IRSA	–	Indus River System Authority
JIP	–	Jalalpur Irrigation Project
NGO	–	nongovernment organization
O&M	–	operation and maintenance
PID	–	Punjab Irrigation Department
PIDA	–	Punjab Irrigation and Drainage Authority
PMO	–	project management office
PPTA	–	project preparatory technical assistance
TOR	–	terms of reference
WAA	–	water apportionment accord

## **WEIGHTS AND MEASURES**

cubic meter per second	–	The quantity of flow in cubic meter that passes through a section in one second.
ha (hectare)	–	The unit of area measured by 100 meter x 100 meter.

## GLOSSARY

abiana	–	irrigation service fee
conjunctive use	–	combined use of surface and ground waters
rabi	–	crops grown during the period from about December to May
kharif	–	crops grown during the period from about June to November

## NOTES

- (i) The fiscal year (FY) of the Government of Pakistan ends on 30 June. FY before a calendar year denotes the year in which the fiscal year ends, e.g., FY2008/2009 ends on 30 June 2009.
- (ii) In this report, "\$" refers to US dollars and "PKR" Refers to Pakistani Rupee.

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## **I. THE PROJECT**

### **A. Rationale**

1. The proposed Jalalpur Irrigation Project (JIP) is located along right bank of River Jhelum in Punjab, Pakistan. It will create new non-perennial irrigation services for enhanced agricultural production on 79,750 ha in Pind Daden Khan and Khushab districts.<sup>1</sup> The project will increase kharif crop intensity by 50%, improve crop yield and reduce land degradation. It will directly benefit over 200,000 rural people; mostly poor. The project will (i) construct over 200 km new irrigation canals, (ii) introduce institutional reforms and establish farmers' organizations (FOs), and (iii) build farmers capacity. The project is included in country operations business plan (COBP: 2013-2014) and it will contribute to food security and economic growth and will alleviate rural poverty in the project area.

2. Pakistan's population of 180 million in 2011 is projected to be 221 million in 2025.<sup>2</sup> The population increase combined together with changed living standards will require 40-50% additional food by 2025. This additional food can be achieved through increased crop yield and expanded irrigated area, wherever opportunities exist. Punjab contributes to about 80% of the Pakistan's food requirements and \$60 billion to the national gross domestic product (GDP). Irrigated agriculture accounts for 28% of Punjab's GDP and employs over 50% of its labor force. Punjab manages an existing irrigation system serving 8.4 million ha irrigated land.<sup>3</sup> Replacement cost of Punjab's irrigation infrastructure is about \$18 billion.

3. The Country Partnership Strategy (CPS) (2009-2013) prioritizes improving the irrigation infrastructure. ADB's agriculture sector evaluation (2006) for Pakistan emphasizes improving water resources and irrigation. The water sector roadmap identifies improving the infrastructure, institutions and agricultural production to drive sustainable agricultural growth. The Medium-Term Development Framework (MTDF) (2007-2012) estimated an investment requirement of over \$100 million per year for irrigation sector. The Punjab Irrigation Department (PID) is working with ADB, World Bank and Japan International Cooperation Agency (JICA) on improvement of irrigated agriculture.<sup>4</sup> ADB's \$700 million multitranche financing facility (MFF) for Punjab Irrigated Agriculture Investment Program (PIAIP) is supporting upgrading the irrigation infrastructure, on-farm agriculture and institutional reforms over 2 million ha. Punjab has already transferred operational management of distributary canals serving another 1.5 million ha to FOs under different projects. Punjab allocated PKR9.0 billion (\$95 million equivalent) in the MTDF 2012-15 for new irrigation projects.

4. A stand-alone project loan is proposed as (i) the project scope is limited to only one irrigation system, (ii) project area is well-defined, (iii) project implementation period will be shorter, and (iv) policy reforms agreed under the PIAIP MFF will also be applied here.

### **B. Impact, Outcome, and Outputs**

5. The project impact will be the increased agricultural production in the project area (Pind Daden Khan and Khushab districts). The project outcome will be irrigation water supplies and agricultural support services available in the project area. The project outputs will be (i) new

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<sup>1</sup> Currently, the farmers' raise wheat and fodder under rainfed conditions and maize and sugarcane with the use of groundwater irrigation in some areas. Irrigation with groundwater of marginal quality causes land degradation.

<sup>2</sup> Pakistan's Economic Survey 2011-12.

<sup>3</sup> Fourteen barrages and 25 canals (6,429 km of main canals and 31,214 km of distributary and minor canals).

<sup>4</sup> Punjab has undertaken rehabilitation of seven barrages (Taunsa, Balloki, Jinnah, Khanki, Suleimanki, Trimmu, Panjnad and Islam) and five canal systems (Lower Chenab, Lower Bari Doab, Pakpattan, Thal and Sidhnai).

irrigation canals and appurtenant structures constructed,<sup>5</sup> (ii) farmers organizations established, (iii) private agriculture support services (PASS) available and (iv) capacity of the farmers and the staff from PID and Punjab Irrigation and Drainage Authority (PIDA) improved.

### C. Investment and Financing Plans

6. An ADF loan of \$150 million will be required for the proposed project. International Fund for Agricultural Development (IFAD) has shown its interest in cofinancing on-farm, capacity building and institutional reform component.<sup>6</sup> A tentative financing plan is in Table 1.

**Table 1: Tentative Financing Plan**

<b>Source</b>	<b>Amount (\$ million)</b>	<b>Share of Total (%)</b>
Asian Development Bank (ADF)	150	78
International Fund for Agricultural Development (IFAD)	20	11
Government	20	11
<b>Total</b>	<b>190</b>	<b>100</b>

Source: Asian Development Bank estimates.

### D. Indicative Implementation Arrangements

7. The PID will be the executing agency (EA) and will create a project management office (PMO), who will be responsible for implementation of the project. The PID has an experience of implementing several water sector projects with ADB, World Bank and Japan International Cooperation Agency (JICA).<sup>7</sup>

8. The lessons learned from the implementation of ongoing and completed projects indicate (i) slow implementation of institutional reforms and associated on-farm component<sup>8</sup> and (ii) delays in recruitment of project implementation consultants (PIC) and consequent upon delays in contract award and disbursement. Delays due to slow implementation of resettlement component in some other projects were also experienced.

9. The above shortcomings will be overcome through (i) outsourcing the institutional and associated on-farm component to international organization (IO) supported by nongovernmental organization (NGO); (ii) earlier start recruiting the project implementation consultants under advance actions; (iii) recruiting quality resettlement staff through consultancy package; and (iv) appropriate works contracts packages.<sup>9</sup>

10. The EA will recruit PIC for implementation of the project in the role of “the Engineer” as defined by FIDIC. Both ICB and NCB procurement methods will be used for works and goods.

<sup>5</sup> Provision for canal headworks already exists. No modification in the Rasul Barrage's main structure is required. However, canal intake structure will be constructed under the project.

<sup>6</sup> The IFAD's commitment of cofinancing will be expected during project preparation.

<sup>7</sup> ADB financed \$700 multitranchise financing facility for Punjab Irrigated Agriculture Investment Program, World Bank financed: Taunsa Barrage (loan amount \$123 million), irrigation system rehabilitation project (loan amount \$200 million) and development policy loan (\$100 million) and Jinnah Barrage rehabilitation project (loan amount \$145 million), and JICA financed \$84 million Punjab irrigation system improvement project.

<sup>8</sup> There was a 3 years gap between the PPTA outputs and recruitment of project implementation consultants under tranche 1 of the irrigation MFF. It took more than 2 years to recruit and train 66 social mobilizers.

<sup>9</sup> The water courses and on-farm related contracts will be implemented through community contracting.



## II. DUE DILIGENCE REQUIRED

11. The due diligence for sector road map, policy framework and governance related issues were already carried out under the PIAIP. The sector road map will be updated. The project related due diligence will include development of full feasibility study and design, economic and financial analysis and safeguard related documents. Due diligence shall include the following:

- (i) **Technical.** Feasibility study and associated engineering design.
- (ii) **Economic and financial.** Economic and financial viability and sustainability.
- (iii) **Governance.** Public financial management, procurement, implementation capacity and institutional reform related policy and legal issues.
- (iv) **Poverty, social and gender.** This will cover social and poverty analysis, gender-inclusive design features and labor impacts and corresponding undertakings.
- (v) **Safeguards.** Following ADB's Safeguard Policy Statement (SPS) 2009, it will cover:
  - a. **Social:** Land acquisition and resettlement plans (LARPs) including grievance redress mechanism (GRM). No impact to Indigenous Peoples is expected in the project area.
  - b. **Environment:** conducting an environmental impact assessment (EIA) study for all likely impacts of the project with an environmental management plan (EMP).
- (vi) **Institutional reforms and agriculture.** FOs operational management of the distributary and minor canals and sustainability of PASS.
- (vii) **Climate change.** Assess the climate change risks and identify opportunities associated with the project using climate technologies.
- (viii) **Monitoring and evaluation.** Proposes an effective monitoring and evaluation mechanism for (a) assessing the impacts, outcome and outputs indicators, (b) implementation of resettlement and environmental management plans and (c) sustainability of operational management.

12. **Water availability.** The four provinces share the water from Indus River and its tributaries following Water Apportionment Accord (WAA) 1991. PID ensured that (i) WAA 1991 allows Punjab to draw water from balanced river supplies including flood supplies and future storages within its 37% allocated share and (ii) JIP will draw irrigation water from Jhelum River only for Kharif crop during May to September, which is predominantly flood flow season. However, the water availability and probable downstream water shortages in the context of climate change impacts will be assessed during project preparation.

## III. PROCESSING PLAN

### A. Risk Categorization

13. The project is considered complex due to land acquisition requirements for construction of new canals and expected category 'A' for involuntary resettlement and environment.

### B. Resource Requirements

14. Estimated staff input will be 14 person months, including (i) 3 person-months of mission leader/water resource specialist, (ii) 1.5 person-months of each social and environmental specialist, (iii) 1 person-month of gender specialist, (iv) 1 person-month of economist, (v) 2 person-months of counsel, (vi) 2 person-months of implementation officer and 1 person-month of each procurement and financial management specialist.

15. A project preparatory technical assistance (PPTA) will produce a feasible project design and implementation plan to ensure that it supports government's and ADB strategies. The PPTA cost of \$800,000 equivalent is proposed to be provided as a grant from ADB Technical Assistance Special Fund (TASF-V). The Government will provide in kind support. The PPTA will include (i) a consulting firm and (ii) IO/NGO for institutional reform and on-farm activities. The firm will provided 80 person-months for feasibility study and related assessments. The government will be informed that the provision of PPTA does not commit ADB to finance any ensuing project. PPTA description and implementation arrangements are in Appendix 4.

### C. Processing Schedule

16. The processing schedule up to loan effectiveness is hereunder.

**Table 2: Proposed Processing Schedule**

<b>Milestones</b>	<b>Expected Completion Date</b>
TA commencement	15 November 2013
Fact-finding mission	15 April 2014
Management review meeting	15 June 2014
Loan negotiations	18-19 August 2014
Board consideration	8 September 2014 (high case)
Loan signing	3 November 2014
Loan effectiveness	15 December 2014

Source: Asian Development Bank estimates.

## IV. KEY ISSUES

17. The following issues are identified and corresponding mitigation measures are proposed.

- **Safeguards.** Construction of new canals will require land acquisition and a strict environmental monitoring. The PPTA will prepare LARPs and EIA in accordance with ADB's SPS (2009).
- **Institutional reforms.** In the long term, the project's sustainability will largely depend on equitable water supply and adequate maintenance of the irrigation system. A decentralized operational management through trained FOs is proposed.
- **Project readiness and implementation.** Measures to avoid delays in project implementation include (i) appointment of the project's focal person from the beginning, (ii) extending existing PMO PIAIP structure to cover the proposed project, and (iii) advance contracting for recruitment of construction supervision consultants.

## BASIC PROJECT INFORMATION

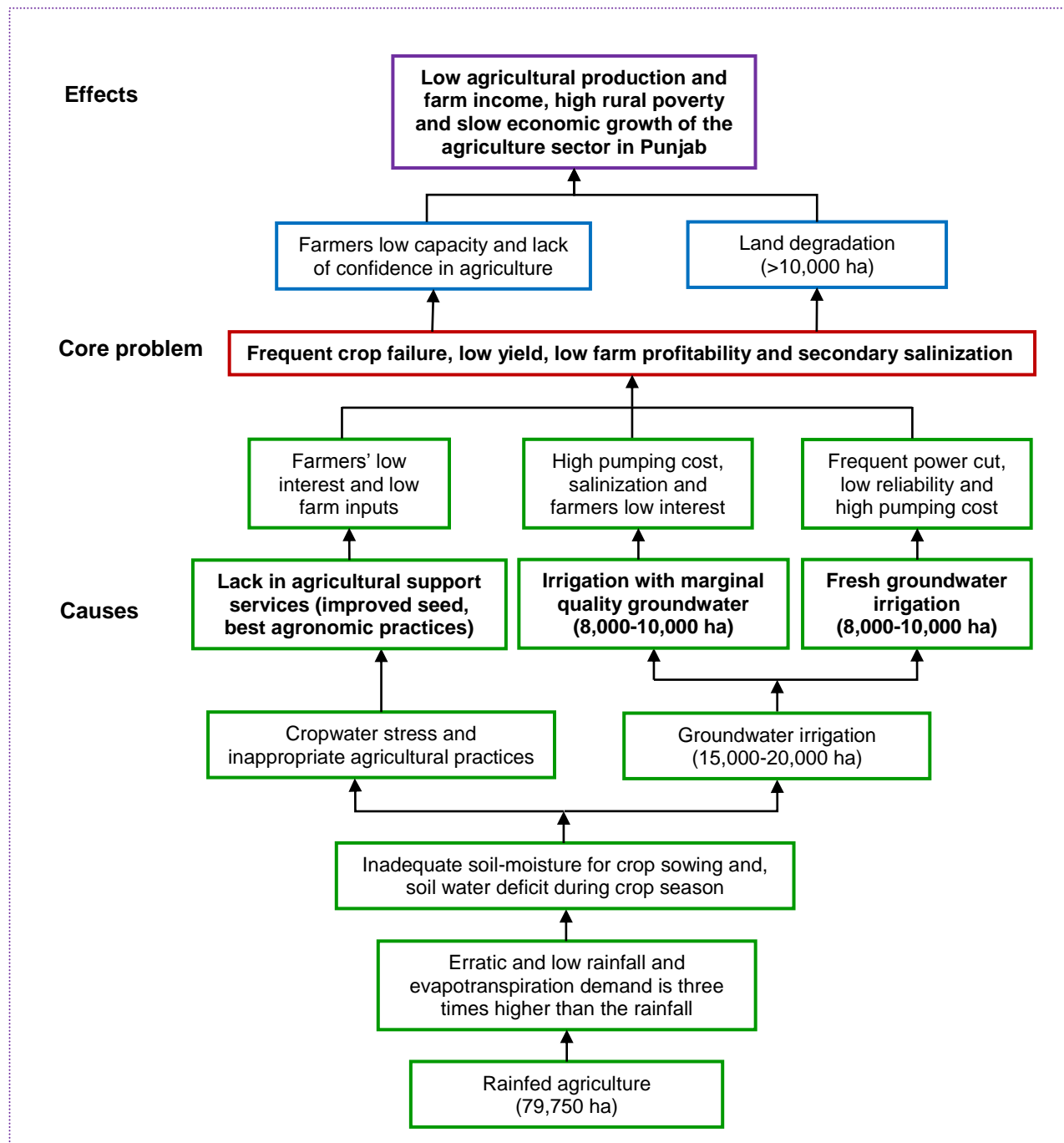
Aspects	Arrangements
Modality	Project loan
Financing	ADF loan amount of \$150 million, expected IFAD's cofinancing of \$20 million and Government of Punjab's contribution of \$20 million.
COBP/ RCOBP	The Project is included in the COBP for 2013-2014. <sup>1</sup>
Classification	<p>Sector (subsectors): Agriculture and Natural Resources (Irrigation, Drainage and Flood Protection)</p> <p>Themes (subthemes): Economic growth (Promoting economic efficiency and enabling business environment)</p> <p>Targeting classification: General intervention <sup>a</sup></p> <p>Gender mainstreaming category: Some gender elements</p> <p>Location impact: Rural (high)</p> <p>Safeguards: Environment A, and involuntary resettlement A is expected. This will be confirmed after completing due diligence. The Indigenous Peoples (IP) classification will be "C" as no IP is expected in the project area.</p>
Risk categorization	Complex
Partnership(s)	Expected cofinancing by IFAD
Use of a PBA	No
Parallel PIU	No
Department and division	<p>Central and West Asia Department (CWRD)</p> <p>Environment, Agriculture and Natural Resources (CWER)</p>
Mission leader and members	<p>Team Leader: Akhtar Ali, Senior Water Resources Specialist</p> <p>Economist: Randall Jones</p> <p>Social development: Ross Butler</p> <p>Environmental issues: Zehra Abbas</p> <p>Counsel: Jennifer Ngai</p> <p>Gender: Jeremy Stickings</p> <p>Climate change: Cinzia Losenno</p> <p>Implementation arrangements: Raza Farrukh</p>

ADF = Asian Development Fund, COBP = country operations business plan, PBA = programmatic based approach, PIU = project implementation unit, RCOBP = regional cooperation operations business plan.

<sup>a</sup> Depending on PPTA outcome, the project classification may be revised to targeted intervention geographic (TI-G).

<sup>1</sup> The Punjab Irrigation Project, COBP 2013-2014.

## PROBLEM TREE



## PRELIMINARY DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
<b>Impact</b>  Improved agricultural production in the proposed Jalalpur Irrigation Project area (Pind Daden Khan and Khushab districts)	<u>By 2024 (baseline of 2013)</u> <ul style="list-style-type: none"> <li>Over 50% increase in Kharif cropping intensity</li> <li>Over 20% increase in crop yield</li> <li>Over 20% increase in water productivity</li> <li>Over 10% increase in farm income</li> </ul>	<ul style="list-style-type: none"> <li>Government of Punjab's yearly agricultural statistical data for crop yield and intensity.</li> <li>Assessment study for water productivity and farm income (PPMS)</li> </ul>	<b>Assumption</b> Government continues to give priority to the irrigated agriculture  <b>Risk</b> Government divert more water to other sectors or areas
<b>Outcome</b>  Irrigation water supplies and agricultural support services available in the project area.	<u>By 2021 (baseline of 2013)</u> <ul style="list-style-type: none"> <li>79,750 ha land improved through irrigation supplies</li> <li>Farmers have access to private agriculture support services (PASS)</li> <li>Designed water supply measured at the outlets from upstream to downstream</li> </ul>	<ul style="list-style-type: none"> <li>Government of Punjab's yearly agricultural statistical data</li> <li>Government's project completion report.</li> <li>Special study (PPMS)</li> </ul>	<b>Assumption</b> FOs fulfill requirements of an effective operational management.
<b>Outputs</b>  1. Irrigation canals and appurtenant structures constructed	<u>By 2020 (baseline of 2013)</u> <ul style="list-style-type: none"> <li>xxx kms of new canals are operational.</li> <li>xxx hydraulic structures deliver their designed discharges</li> <li>Main canal diverts up to <math>38 \text{ m}^3 \text{ s}^{-1}</math> water to the distribution system.</li> </ul>	<ul style="list-style-type: none"> <li>Government's QPRs</li> <li>Government's QPRs</li> <li>Irrigation Department's canal operation data</li> </ul>	
2. Farmers organizations established	<ul style="list-style-type: none"> <li>xxx new water users associations formed and trained in water course management by 2019.</li> <li>xxx new farmers organizations formed and trained in operational management by 2019.</li> </ul>	<ul style="list-style-type: none"> <li>Government's QPRs</li> <li>Government's QPRs</li> </ul>	<b>Risk</b> Any major dispute delays formation of the farmers organizations
3. Private agricultural support services (PASS) available	<u>By 2019 (baseline of 2013)</u> <ul style="list-style-type: none"> <li>xxx new PASS providers established</li> </ul>	<ul style="list-style-type: none"> <li>Government's QPRs</li> </ul>	<b>Assumption</b> Private sector is willing to participate

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
	and trained.		
4. Capacity of the farmers and staff from Punjab Irrigation Department and Punjab Irrigation and drainage Authority improved	<ul style="list-style-type: none"> <li>• xxx farmers trained on the efficient irrigation &amp; improved agronomic practices by 2019</li> <li>• xxx farmers involved in meetings, walkthrough and small construction works by 2018.</li> <li>• xxx officials from PID/PIDA trained by 2018.</li> </ul>	<ul style="list-style-type: none"> <li>• Government's QPRs</li> <li>• Government's QPRs</li> <li>• Government's QPRs</li> </ul>	

<b>Activities with Milestones</b> <b>1. Irrigation canals and appurtenant structures</b> 1.1 Recruitment of project implementation consultants by Mar 2015. 1.2 Approval of bidding documents for first works contract under advance actions by Dec 2015. 1.3 Bid Invitation, evaluation and award of civil works contract starts by Oct 2016. 1.4 Main canal constructed by Oct 2019. 1.5 Distribution system constructed by Oct 2020. <b>2. Farmer organizations (FOs)</b> 2.1 Recruitment of IO/NGO by Sep 2014 2.2 Establish farmers organizations by Jun 2019 2.3 Train farmers organizations (2016-2020) <b>3. Private agriculture support services (PASS)</b> 3.1 Identification and communication with potential PASS providers by Jun 2018 3.2 Training of PASS providers by Jun 2019 <b>4. Capacity building</b> 4.1 Establishing demonstration plots by Dec 2019 4.2 Arranged study tours for farmers, 2017-2019 4.3 Arranged training of PID staff, 2016-2018	<b>Inputs</b>  <b>A. Project</b>  ADB: \$150 million ADF loan IFAD: \$20 million Government: \$20 million (counterpart financing) <hr/> <b>Total</b> \$190 million <hr/> <b>B. Technical Assistance</b>  ADB: \$800,000 (TASF-V) Government: in kind <hr/> <b>Total</b> \$900,000 Consulting firm: 80 person-months. International Organization: 14 person-months NGO recruitment: \$40,000
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FO = farmers' organization (Distributary and minor canal level water management organizations), IO = international organization, NGO = nongovernmental organization, PPMS = project performance monitoring system, PASS = private agriculture support services, QPR = quarterly progress report, WUA = water users' association (A water course level water management organization).

Source: Preliminary feasibility study and ADB estimate.

## PROJECT PREPARATORY TECHNICAL ASSISTANCE

### A. Justification

1. The government carried out a preliminary feasibility study in 2008, which lacks in appropriate assessment of social and environmental safeguards, biodiversity, groundwater, drainage, institutional development, on-farm water and agriculture and climate change related issues. The cost estimate was based on preliminary design and project benefits were not fully assessed. The project preparatory technical assistance (PPTA) is necessary to undertake due diligence in technical, safeguards, economic and financial, and poverty and social areas. The PPTA is included in COBP for 2013. The PPTA will be provided through a consulting firm and international organization (IO) supported by nongovernment organization (NGO). The IO selected for project preparation will remain eligible to compete for the project implementation, if it is not involved in the preparation of terms of reference (TOR).

### B. Major Outputs and Activities

2. The PPTA's consulting firm's output will be the TA consultants' final report that will include due diligence to meet ADB's requirements for (i) technical aspects;<sup>1</sup> (ii) safeguards;<sup>2</sup> and (iii) economic and financial viability and governance related issues. The PPTA will also prepare an engineering design and project's PC-1.<sup>3</sup> The PPTA will also assist in processing the ensuing loan as required. The consultant's final report is anticipated by June 2014. The IO's outputs will be the plans for institutional development, on-farm agriculture and water management, and farmers' capacity building vis-à-vis community consultation and awareness raising.

3. The major outputs and activities are summarized in Table A4.1.

**Table A4.1: Summary of Major Outputs and Activities**

Major Activities	Expected Completion Date	Major Outputs	Expected Completion Date
<b>Consulting Firm</b>			
Water availability study	31 Dec 2013	Report	15 Jan 2014
Surveys and analysis <sup>a</sup> : - Household's, poverty and social - Indigenous people - Biodiversity & Environment - Water and soil quality - Topographic	<ul style="list-style-type: none"> <li>• 15 Jan 2014</li> <li>• 15 Jan 2014</li> <li>• 15 Feb 2014</li> <li>• 15 Mar 2014</li> <li>• 15 Mar 2014</li> </ul>	<ul style="list-style-type: none"> <li>• IPSA</li> <li>• LARP</li> <li>• EIA and EMMP</li> <li>• Water quality report</li> <li>• Survey sheets</li> </ul>	<ul style="list-style-type: none"> <li>• 31 Jan 2014</li> <li>• 28 Feb 2014</li> <li>• 28 Feb 2014</li> <li>• 15 Apr 2014</li> <li>• 15 Apr 2014</li> </ul>
Financial management	28 Feb 2014	Assessment Report	15 Mar 2014
Climate change data	15 Jan 2014	Assessment report	31 Mar 2014
Technical due diligence	15 Apr 2014	Interim report	30 Apr 2014
Economic and financial analysis	30 Apr 2014	Assessment report	15 May 2014
Feasibility report and PC-1	15 May 2014	Reports	30 Jun 2014
Assist in loan processing	15 Apr 2014	Due diligence	30 Sep 2014
<b>IO/NGO</b>			
Data collection <sup>a</sup> (On-farm practices, formal and informal service providers &	28 Feb 2014	Assessment report	31 Mar 2014

<sup>1</sup> Irrigation canals, groundwater, drainage, flood protection, water and soil quality assessments.

<sup>2</sup> Social including poverty and social analysis, land acquisition and resettlement plan and indigenous people plan; if required, environmental including environmental impact assessment (EIA), biodiversity and environmental monitoring and management plans (EMMP), and climate change.

<sup>3</sup> The engineering design is required for an accurate assessment of project cost and preparation of PC-1 (Planning Commission Proforma 1), which is required for government's internal approval of the project concepts and cost. However, detailed design is not included in the scope of PPTA.

institutions)			
Community consultation and awareness raising	Intermittent	<ul style="list-style-type: none"> <li>• Focused group meetings</li> <li>• Awareness brochures</li> <li>• Seminars</li> </ul>	To be determined.
Develop plans: - On-farm water & agriculture management - Institutional development - Impact indicators	15 Apr 2014	Assessment reports on PASS, demonstration plot, WUAs/FOs and impact indicators	15 May 2014
<sup>a</sup> The data collection will be properly planned and shared; EIA = environmental impact assessment; EMMP = environmental monitoring and management plan; FOs = farmer organizations; IPSA = initial poverty and social analysis; LARP = land acquisition and resettlement plan; PASS = private agriculture support services; PC-1 = Planning Commission Proforma 1; WUAs = water user associations. Source: ADB estimates.			

### C. Cost Estimate and Proposed Financing Arrangement

4. The TA cost is estimated at \$900,000 equivalent. ADB will provide \$800,000 on a grant basis from ADB's Technical Assistance Special Fund (TASF-V). The government will provide counterpart support in the form of field lodge accommodation, data and documents and PIDA's relevant staff support and coordination with other departments. Cost and financing plan are in Table A4.2.

**Table A4.2: Details of Cost Estimates and Financing Plan for Firm**  
(\$'000)

Item	Cost		
	Firm	IO	Total
<b>Asian Development Bank</b>			
1. Consultants			
a. Remuneration and Per Diem			
i. International Consultants (Firm = 6 person-months)	160.0	0.0	160.0
ii. National Consultants (Firm = 78 person-months; IO = 14 person-months)	330.0	56.0	386.0
b. International and Local Travel	57.0	15.0	72.0
c. Reports and Communications	3.0	2.0	5.0
2. Equipment (computers, printers, photocopier, water and soil samplers etc.)	20.0	4.0	24.0
3. Surveys and Investigations including Laboratory Tests	30.0	0.0	30.0
4. Workshops, Training / Seminars & Conferences			
a. Facilitators	0.0	1.0	1.0
b. Training Program (Community Consultation)	0.0	1.0	1.0
c. Training facility	0.0	1.0	1.0
5. Miscellaneous Administration and Support Cost	10.0	5.0	15.0
6. Contingencies	5.0	5.0	10.0
7. Provisional Sum for Environmental Study (through Sub-contract)	55.0	0.0	55.0
8. Provisional Sum for NGO (through Sub-contract)	0.0	40.0	40.0
<b>Total</b>	<b>670.0</b>	<b>130.0</b>	<b>800.0</b>

Note. (i) The government's in-kind contribution includes free use of field lodge accommodation, data and documents and PIDA's relevant staff support and coordination with other departments, whose value is estimated to account for 11.11% of the total TA cost.

(ii) Cost of climate change study is not included, which will be supported under a separate funding arrangement.

(iii) The equipment purchased under the TA will be handed over to the PID upon TA completion

Source: Asian Development Bank estimates.

### D. Consulting Services

5. The consulting service shall be provided through (a) consultancy firm mainly for feasibility study and (b) IO/NGO for institutional, on-farm and capacity building components. The PPTA will



provide 80 person-months through consultancy firm(s) and 14 person-months of IO/NGO. The consultants will be recruited in accordance with ADB's Guidelines on the Use of Consultants (2010, as amended from time to time).<sup>4</sup> The consultancy firm will be selected through quality- and cost-based selection (QCBS) method (90:10). A simplified technical proposal will be requested from the shortlisted firms. The IO will be recruited through quality-based selection (QBS) as (i) on-farm and institutional component will have overriding influence on the outcome of the project, (ii) not many suitably experienced IOs available in Pakistan and (iii) proposed assignment can be carried out in different ways, which may constrain comparison of financial proposal. The selected IO will recruit a national non-government organization (NGO) for social mobilization and community communication and coordination. A provisional sum will be allocated in the contract of IO for the recruitment of the NGO. ADB fact-finding mission in March 2013 identified two potential relevant international organizations i.e. International Center for Agricultural Research in the Dry Area (ICARDA) and International Water Management Institute (IWMI) and one NGO i.e. National Rural Support Program (NRSP) due to their experience in on-farm agricultural and water management and community mobilization, presence in the project area and knowledge of local issues and community.<sup>5</sup> The mission agreed the inclusion of IO/NGO services with the Government. The person-months requirements for the firm and IO are in Table A4.3.

**Table A4.3: Summary of Consulting Services Requirements for Firm and IO**

Positions under Firm	Person-Months Requirement for Firm	Positions under IO	Person-Months Requirement for IO
<b>International</b>			
Irrigation Reform Specialist	3.0		
Resettlement Specialist	2.0		
<b>Total (International)</b>	<b>5.0</b>		
<b>National</b>		<b>National</b>	
Irrigation Water Management Specialist (Team Leader)	12.0	Project and Change Management Specialist (Team Leader)	3.0
Hydraulic Design Engineer	12.0	Agricultural Communication Specialist	5.0
Structural Design Engineer	4.0	On-farm Water Management Specialist	3.0
Geotechnical Engineer	2.0	Community Development Specialist	3.0
Agricultural Economist	3.0	<b>Total</b>	<b>14.0</b>
Agricultural System Specialist	4.0		
Soil and Water Quality Specialist	4.0		
Gates, Control and Mechanization Specialist	3.0		
Social and Gender Specialist	3.0		
Resettlement Specialist	4.0		
Procurement Specialist	2.0		
Legal Specialist (Land & Revenue)	2.0		
Financial Management Specialist	2.0		
Unallocated	18.0		
<b>Total (National)</b>	<b>75.0</b>		

Notes: (i) The environmental study will be conducted through sub-contracting and financed from provisional sum.

(ii) The climate change impact study (5 person-months) will be supported under different funding arrangement.

Source: Asian Development Bank estimates.

6. The outline terms of reference (TOR) for the consulting firm under the project preparatory technical assistance (PPTA) are described in paras. 7 to 21.

7. **Irrigation Reform Specialist (International; 3 person-months).** With a minimum of 15 years relevant experience, the expert will (i) review on-going irrigation reforms in Punjab, (ii)

<sup>4</sup> Available at: <http://www.adb.org/Documents/Guidelines/Consulting/Guidelines-Consultants.pdf>

<sup>5</sup> NRSP has implemented 55 relevant projects in Pakistan; 24 of them in Punjab.

prepare appropriate strategy for development of farmer organizations and (iii) develop implementation plan and FOs performance monitoring indicators.

8. **Resettlement Specialist (International; 2 Person-months).** With a minimum relevant experience of 15 years, the expert will (i) assess capacity of the EA and provide guidance to prepare land acquisition and resettlement plan (LARP) and indigenous people plan, (ii) review the outputs of national staff and (iii) prepare final LARP.

9. **Irrigation Water Management Specialist (TL; National; 12 person-months).** With a minimum experience of 15 years the expert will (i) provide overall direction to the team, coordinate for inputs and will be responsible for outputs; (ii) ensure water allocation and institutional reforms and resettlement are implemented as per requirements and (iii) recommend system innovations that will improve water use efficiency and delivery flexibility.

10. **Hydraulic Design Engineer (National; 12 person-months).** With a minimum of 10 years relevant experience the expert will (i) prepare alternate proposals for canals and flood protection works, (ii) carry out design of canals and appurtenant structures and (iii) estimate cost.

11. **Structural Design Engineer (National; 4 person-months).** With a minimum relevant experience of 10 years, the expert will (i) carry out structural design, (supervise preparation of drawings and (iii) estimate the relevant costs.

12. **Geotechnical Engineer (National; 2 person-months).** With a minimum relevant experience of 10 years, the expert will (i) carry out geotechnical investigations, (ii) prepare relevant design and (iii) estimate costs.

13. **Agricultural Economist (National; 3 Person-months).** With a minimum relevant experience of 15 years, the expert will (i) review the cost and benefits; (ii) analyze relevant investment scenarios for the project and (iii) assess the economic and financial returns on the investments.

14. **Agriculture System Specialist (National; 4 person-months).** With a minimum of 15 years relevant experience, the expert will (i) collect all relevant data and review documents, (ii) assess the farm inputs, input costs and benefits (iii) propose cropping pattern and estimate crop water requirements; and (iv) assess benefits of the proposals.

15. **Soil and Water Quality Specialist (National; 48 person-months).** With a minimum of 15 years relevant experience, the expert will (i) collect all relevant data and review documents, (ii) draw inference from the past; and (iii) advise on future trends and proposed measures.

16. **Gates and Mechanization Specialist (National, 3 person-months).** With a minimum of 10 years relevant experience, the expert will carry out design of gates and hoisting arrangement and prepare cost estimate.

17. **Social and Gender Specialist (National, 3 person-months).** With a minimum of 5 years relevant experience, the expert will (i) collect relevant data and documents, (ii) conduct gender analysis, and prepare a gender action plan; and (iii) assess potential of women involvement in FOs, PASS and other related activities.

18. **Resettlement Specialist (National, 4 person-months).** With a minimum of 7 years relevant experience, the expert in accordance with ADB's SPS (2009) will (i) identify survey

requirement, prepare plan and oversee the collection of relevant data, (ii) prepare LARP and indigenous people plan; and (iii) prepare a capacity development program.

19. **Procurement Specialist (National; 2 person-months).** With a minimum of 5 years relevant experience, the expert will prepare civil works packages and bidding documents following ADB's Standard Bidding Documents (SBD).

20. **Legal Expert (Land and Revenue) (National, 2 person-months).** With a minimum of 10 years relevant experience, the expert will assist the team in (i) legal aspects related to land acquisition and resettlement, (ii) dispute resolution; and (iii) preparing action plan.

21. **Financial Management Specialist (National, 2 person-months).** With minimum of 10 years of relevant experience, the expert will (i) assess the EA's capacity in financial management and control; (ii) develop guidelines, (iii) design the funds flow and disbursement mechanisms for the ensuing project; and (iv) identify capacity building requirements.

22. **Environmental Study.** The selected firm will recruit an environment team/firm under a sub-consultancy contract using provisional sums for this item. The sub-consultants will conduct environmental impact assessment (EIA) covering all the likely impacts of the project with environment management plan (EMP).

23. The outline terms of reference for the IO/NGO are in paras. 23 to 27.

24. **Project and Change Management Specialist (TL; National; 3 person-months).** With a minimum of 15 years relevant experience, the expert will be responsible for (i) overall inputs and outputs of the IO/NGO, (ii) development of plans for change management; (iii) coordination with other stakeholders; and (iv) preparing the report.

25. **Agriculture System and Communication Specialist (National; 5 person-months).** With a minimum of 15 years relevant experience, the expert in consultation with the communities will (i) identify the major farming systems and related agricultural practices, (ii) assess most influencing profitability and sustainability factors, (iii) develop plan for introduction of best management practices; and (iv) assess potential for involvement of private sector.

26. **On-Farm Water Management Specialist (National; 3 person-months).** With a minimum of 15 years relevant experience, the expert in consultation with farmers will develop plan for (i) introduction of farm level water efficient packages, (ii) conjunctive water use, (iii) on-farm water storage facilities; and (iv) assessment of water productivity.

27. **Community Development Specialist (National; 3 person-months).** With a minimum of 10 years relevant experience, the expert will develop plan and strategy for (i) communities communication, coordination and mobilization, (ii) introduction of experience and lesson learned from other on-going and completed institutional and community-based projects; and (iii) provide guidance to the NGO for reform principles and practices.

28. **Role of NGO.** The NGO will (i) collect communities related data including formal and informal service providers, volunteer groups, (ii) arrange communities meetings and raise awareness, (iii) introduce reform principles and conduct consultation, (iv) expose the farmers to the institutional reforms elsewhere; and (v) initiate dialogue for formation of, WUA, FOs and PASS exploring women active participation.

## E. Implementation Arrangements

29. Punjab Irrigation Department (PID) will be the executing agency (EA) for PPTA and ensuing loan. Punjab Irrigation and Drainage Authority (PIDA) will share its experience and information and will provide guidance on the institutional reforms. PID/PIDA will provide counterpart support in the form of field lodge accommodation, data and documents and PIDA's relevant staff support and coordination with other departments. ADB will closely coordinate with PID, PIDA and PPTA consultants for timely outputs. The disbursements under the TA will be done in accordance with the ADB's Technical Assistance Handbook (May 2010, as amended time to time).

30. The proposed TA processing and implementation schedule is listed in Table A4.4.

**Table A4.4: Technical Assistance Processing and Implementation Schedule**

<b>Major Milestones</b>	<b>Expected Completion Date</b>
Mobilization of Consultants	15 November 2013
Final Report	30 June 2014
TA Completion	31 December 2014

Source: Asian Development Bank.

## INITIAL POVERTY AND SOCIAL ANALYSIS

Country:	Pakistan	Project Title:	Jalalpur Irrigation Project
Lending/Financing Modality:	Project	Department/ Division:	CWRD/CWER

### I. POVERTY ISSUES

#### A. Links to the National Poverty Reduction Strategy and Country Partnership Strategy

1. Poverty Reduction. The IMF country report indicated that the Government's poverty reduction strategy paper-II (PRSP, 2010) emphasizes the need for protecting the poor and the vulnerable people by increasing productivity and value addition in agriculture through removing the infrastructure bottlenecks, including the irrigation infrastructure Governments vision 2030, which was approved in 2007 and corresponding medium term development framework (MTDF) (2005-2014) focuses on economic growth and poverty reduction through 10 strategic pillars, including removing the infrastructure bottleneck. The Government estimated that the proportion of the population living below the poverty line fell sharply from 34.5% in FY2001 to 22.3% in 2006; a decline of 12.2 percentage points in 5 years. However, the World Bank study estimated that the number of poor in Pakistan actually increased by 2.6 million from FY1999 to FY2005.<sup>1</sup> The incidence of poverty in rural area; where agriculture is the major source of income of the majority population, is much higher. Country Partnership Strategy (CPS: 2009-2013) showed that poverty is inequitably distributed—the level of rural poverty is double that of urban poverty and identifies that investment in agriculture and natural resources is required for its sustainable development.
2. It is estimated that increase in population in Pakistan will require 40-50% additional food by 2025. Punjab's irrigated agriculture significantly contributes to food security and poverty reduction through employing over 40% of provincial labor force. The proposed project through irrigation supplies will directly increase the food production and improve the income of about half a million rural people; mostly poor. Further, the irrigated agriculture will create better jobs opportunities for on-farm and off-farm labors in the project area. Therefore, the proposed project through enhance production and on-farm labor will directly contribute to poverty reduction.

#### B. Targeting Classification

☒ General Intervention ☐ Individual or Household (TI-H) ☐ Geographic (TI-G) ☐ Non-Income MDGs (TI-M1, M2, etc.)

The project design includes supply irrigation water to 79,750 ha and on-farm agricultural and water management demonstration vis-à-vis farmers empowerment in operational management of the irrigation system. These interventions will boost the crop production and increase the demand for farm labors. It will also create jobs during project implementation. Majority of the farmers in the project area have small-holdings and poor. Overall the interventions are pro-poor and will greatly benefit to the poor.

#### C. Poverty Analysis

1. If the project is classified as TI-H, or if it is policy-based, what type of poverty impact analysis is needed?  
Not applicable.
2. What resources are allocated in the PPTA/due diligence? The PPTA will carry out poverty and social survey. Two person-months and adequate budget is allocated for the survey.
3. If GI, is there any opportunity for pro-poor design (e.g., social inclusion subcomponents, cross subsidy, pro-poor governance, and pro-poor growth)? The project design includes on-farm agricultural opportunities. The PPTA will identify the poorest of the poor farmers that will be included in participation in water users associations as well as in farmers' organizations. The PPTA will also identify the opportunities for farm labor specifically for women.

<sup>1</sup> World Bank, 2006. *Summary of Key Findings and Recommendation for Pakistan: Poverty, 2004-05*. Islamabad.

II. SOCIAL DEVELOPMENT ISSUES	
<b>A. Initial Social Analysis</b> Based on existing information: <ol style="list-style-type: none"> <li>Who are the potential primary beneficiaries of the project? How do the poor and the socially excluded benefit from the project? The project will benefit more than 200,000 rural people; most of them are small farmers. The direct beneficiaries will be the farmers through irrigation supplies, agricultural support services and stabilized crop yield. The other beneficiaries will include farm labor and women through enhanced farming activities</li> <li>What are the potential constraints in accessing the proposed benefits and services, and how will the project address them? Rainfall variability, inadequate soil-moisture and cropwater stress are the main constraints to agricultural productivity and farm profitability. Irrigation supplies will reduce the cropwater stress and agricultural support services will facilitate farmers to use improved crop varieties and agronomic practices, which combined together will enhance agricultural productivity and income of the rural poor.</li> </ol>	
<b>B. Consultation and Participation</b> <ol style="list-style-type: none"> <li>Indicate the potential initial stakeholders. The potential stakeholders are farmers, farming labor, nongovernmental organizations in the project area and Punjab Irrigation Department. PPTA will firm up the list of main stakeholders.</li> <li>What type of consultation and participation (C&amp;P) is required during the PPTA or project processing (e.g., workshops, community mobilization, involvement of nongovernment organizations and community-based organizations, etc.)? There will be four main categories: (i) farmers to participate in the farmers' organizations, (ii) affected persons as a result of loss of their land and/or livelihood and (iii) NGOs, groups or individuals willing to participate in private agricultural services and (iv) relevant Government departments, where consultation and participation during project preparation and processing will be required.</li> <li>What level of participation is envisaged for project design?  <input checked="" type="checkbox"/> Information sharing   <input checked="" type="checkbox"/> Consultation   <input checked="" type="checkbox"/> Collaborative decision making   <input checked="" type="checkbox"/> Empowerment            All levels of participation will be required at different stages.</li> <li>Will a C&amp;P plan be prepared during the project design for project implementation? <input checked="" type="checkbox"/> Yes   <input type="checkbox"/> No            Please explain. The PPTA will prepare consultation and participation plan to (i) mobilize farmers for development of farmers organizations, (ii) involve private sector for agricultural support service and (iii) develop affected persons plan.</li> </ol>	
<b>C. Gender and Development Proposed Gender Mainstreaming Category: Some Gender Elements (SGE)</b> <ol style="list-style-type: none"> <li>What are the key gender issues in the sector/subsector that are likely to be relevant to this project/program? The low social indicators coupled with limited access to income-generating opportunities have left women considerably more vulnerable to poverty (CPS, 2009-2013). In rural areas women contribution to livelihood is vital. For example, in FY 2006, 54% of women in the workforce were engaged in agriculture.<sup>2</sup> The key gender issue in the agriculture is that despite of women contribution to the sector and household food security, it remains under reported. Women's contribution to agriculture activities such as seed cleaning, participation in sowing and harvesting and particularly livestock husbandry has largely been acknowledged, but women have not benefited from improved access to extension services, information, technology, and new varieties.</li> <li>Does the proposed project/program have the potential to promote gender equality and/or women's empowerment by improving women's access to and use of opportunities, services, resources, assets, and participation in decision making?  <input checked="" type="checkbox"/> Yes   <input type="checkbox"/> No   Please explain. The majority landholdings belong to men in the project area. However, women landholders will be encouraged to participate in the water users associations and farmers organizations as much as possible within the socio-cultural environment. The PPTA will further assess and identify the ways and means of promotion of gender equity in the project.</li> <li>Could the proposed project have an adverse impact on women and/or girls or to widen gender inequality?  <input type="checkbox"/> Yes   <input checked="" type="checkbox"/> No   Please explain. The project is to improve water availability, crop yield and farm income, therefore adverse impacts on women are not envisaged PPTA will further firm up through assessment.</li> </ol>	

<sup>2</sup> Government of Pakistan. 2007. Labor Force Survey 2005-2006. Islamabad reported in CPS (2009-2013).

<b>III. SOCIAL SAFEGUARD ISSUES AND OTHER SOCIAL RISKS</b>			
<b>Issue</b>	<b>Nature of Social Issue</b>	<b>Significant/Limited/ No Impact/Not Known</b>	<b>Plan or Other Action Required</b>
<b>Involuntary Resettlement</b>	Land acquisition along the routes of canal will require development and implementation of resettlement plans.	Due to new canals and requirements for land acquisition, significant impacts are expected and project is categorized as "A" for involuntary resettlement.	<input checked="" type="checkbox"/> Resettlement Plan
<b>Indigenous Peoples</b>	Indigenous people in the project area are not expected. However, PPTA will further assess this issue.	No impact. However, PPTA will further confirm.	<input checked="" type="checkbox"/> Uncertain
<b>Labor</b> <input checked="" type="checkbox"/> Employment Opportunities <input type="checkbox"/> Labor Retrenchment <input checked="" type="checkbox"/> Core Labor Standards	Bidding documents for civil works will include provisions related to (i) compliance with applicable labor laws; (ii) do not differentiate payment between men and women for work of equal value; (iii) do not employ child labor; (iv) eliminate forced or compulsory labor; and (v) eliminate discrimination in respect of employment.	Limited (positive)	<input checked="" type="checkbox"/> Other Action
<b>Affordability</b>	The project will increase crop yield and farm income as well as labor opportunities	No impact	<input checked="" type="checkbox"/> No Action
<b>Other Risks and/or Vulnerabilities</b> <input type="checkbox"/> HIV/AIDS <input type="checkbox"/> Human Trafficking <input type="checkbox"/> Others (conflict, political instability, etc.), please specify		No impact	<input checked="" type="checkbox"/> No Action
<b>IV. PPTA/DUE DILIGENCE RESOURCE REQUIREMENT</b>			
1. Do the TOR for the PPTA (or other due diligence) include poverty, social and gender analysis and the relevant specialist/s? <div style="text-align: center;"> <input checked="" type="checkbox"/> Yes                      <input type="checkbox"/> No           </div>			
2. Are resources (consultants, survey budget, and workshop) allocated for conducting poverty, social and/or gender analysis, and C&P during the PPTA/due diligence? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Three person-months of social and gender specialist, 8 person-months of resettlement specialists and funds allocation for survey, environmental study and international organization/ NGO will support such work.			