

TERMS OF REFERENCE FOR CONSULTANTS

1. The transaction technical assistance will be carried out by a team of consultants. A total of 12.5 person-months of international and 30.5 person-months of national consulting services will be required. To ensure the consistency in due diligence and capacity strengthening, a consulting firm will be recruited to carry out the due diligence in technical feasibility, economic and financial viability, poverty, social and gender analyses, safeguards and capacity strengthening. The consultants will be recruited in accordance with the Asian Development Bank (ADB) Procurement Policy (2017, as amended from time to time) using quality- and cost-based selection method (with a quality-cost ratio of 90:10) following the simplified technical proposal. Consultants' terms of reference for the anticipated positions are described below. The international and national specialists will hold at least a master's or bachelor's degree, respectively, in a field relevant to the assignment; and at least 10 years and 5 years demonstrated experience, respectively, relevant to the assignment.

Summary of Consulting Services Requirement

International Positions	Person-months	National Positions	Person-months
Agricultural economist and team leader	4.5	Irrigation management specialist	4.0
Water resources and irrigation planning specialist	2.0	Agronomist/horticulturist	4.0
Social development and gender specialist	2.5	Institutional irrigation specialist	2.0
Environment specialist	2.5	Management information specialist	2.0
Climate change specialist	1.0	Hydrologist	2.0
		Financial specialist and deputy team leader	4.5
		Climate change specialist	2.0
		Social development and gender specialist	3.0
		Environment specialist	3.0
		Financial management specialist	2.0
		Procurement specialist	2.0
Total	12.5		30.5

Source: Asian Development Bank estimates.

2. **Agricultural economist and team leader** (international, 4.5 person-months). In accordance with ADB's Economic Analysis for Investment Project Guidelines and the 10 key areas of the economic analysis listed in the operations manual Section G1, the economist will (i) assess the macroeconomic and sector contexts, (ii) assess demand for project outputs, (iii) establish economic rationale of public sector involvement, (iv) assess least-cost investment options, (v) conduct project economic cost-benefit analysis, (vi) assess financial and institutional sustainability, (vii) conduct a distribution analysis, and (viii) conduct sensitivity and risk analyses.

3. **Financial specialist and deputy team leader** (national, 4.5 person-months). The specialist will conduct financial evaluation of the project, financial analysis of executing and implementing agencies, and financial management assessment of executing and implementing agencies according to Financial Due Diligence-A Methodology Note and Financial Management Analysis of Projects.

4. **Water resources and irrigation planning specialist** (international, 2.0 person-months). The specialist will take the lead in designing irrigation systems as well as making detailed inputs to the other components on agriculture and horticulture water related issues.

5. **Irrigation management specialist** (national, 4.0 person-months). The specialist will be responsible for developing efficient water management systems and propose irrigation practice with reduce losses in field application.

6. **Agronomist/horticulturist** (national, 4.0 person-months). The specialist will be responsible for an assessment of cropping systems and propose water efficient and profitable cropping systems. The specialist will also develop training materials for use by extension services on integrated pest management, soil quality improvement, and farm shelter belts.

7. **Institutional irrigation specialist** (national, 2.0 person-months). The specialist will be responsible for establishing the institutional and legal context of irrigation infrastructure and its linkages with other national initiatives for investment. The specialist will also develop an institutional framework for performance-based management, and operation and maintenance of irrigation systems.

8. **Management information specialist** (national, 2.0 person-months). The specialist will develop an irrigation management information system which includes the use of satellite-based water resources information.

9. **Hydrologist** (national, 2.0 person-months). The specialist will carry out hydrological studies and design storage and diversion structure for irrigation. The specialist will also conduct water balance assessments on a sub-basin scale.

10. **Social development and gender specialists** (international, 2.5 person-months; national, 3.0 person-months). The specialists will (i) prepare and implement a consultation and participation plan for the technical assistance period; (ii) collect baseline socioeconomic data and poverty profiles, including sex-disaggregated data; (iii) conduct poverty, social, and gender analyses; (iv) assess the participation of women in water user associations and producer groups, and their access to finance, technology, knowledge, and market; (v) assess the project's social impacts and benefits across different social groups, and identify needs and opportunities for local people; (vi) develop measures to target women, the poor, and vulnerable groups; (vii) prepare the project social and gender action plan, and the consultation and participation plan; (viii) assess potential benefits and impacts to indigenous peoples; and if needed, develop an indigenous peoples plan; and (ix) ensure that the project does not involve involuntary resettlement, and reconfirm the project's category on involuntary resettlement.

11. **Environment specialists** (international, 2.5 person-months; national, 3.0 person-months). The specialists will (i) document the existing conditions and baseline status of key environmental parameters in the project area; (ii) assess potential project impacts, including social impacts of environmental interventions; (iii) develop project mitigation measures and assess any residual (net) impacts; and (iv) prepare an initial environmental examination that meets the requirements of ADB's Safeguard Policy Statement for environment.

12. **Financial management specialist** (national, 2.0 person-months). The specialist will (i) conduct financial management assessments and financial analyses of the project entities; (ii) prepare project cost estimates and financing plan; (iii) propose arrangements for the project financial management; (iv) design and implement training; (v) contribute to the risk management and mitigation plan, and related inputs to the project administration manual; and (vi) propose funds flow and disbursement arrangements based on financial management assessment.

13. **Procurement specialist** (national, 2.0 person-months). The specialist will (i) carry out project procurement risk and capacity assessments; (ii) prepare the project procurement plan; (iii) prepare the master bidding documents for the contracts in the procurement plan; (iv) prepare bidding documents for first year of project implementation; and (v) provide initial procurement training to executing and implementing agencies' staff.

14. **Climate change specialists** (international, 1.0 person-month; national, 2.0 person-months). The specialists will prepare a climate risk and adaptation assessment for the project, including project viability under various climate change scenarios, adaptation and mitigation measures, incremental project costs for adaptation and mitigation, and estimate of greenhouse gas emissions by the project.