

PROJECT PREPARATORY TECHNICAL ASSISTANCE

A. Justification

1. The project preparatory technical assistance (PPTA) is necessary to (i) develop feasibility study of the Kundaliya Irrigation Project (KIP), (ii) review the technical and economic viability of KIP, (iii) evaluate and address safeguard requirements, (iv) prepare project 1 consultants request for proposal and KIP's tender and turnkey contract documents, (v) undertake financial and procurement assessments of the executing agency, (vi) prepare all requirements for a multitranche financing facility (MFF) and project, and (vii) support implementation start-up.

B. Major Outputs and Activities

2. Key outputs of the PPTA are listed in Table A3.1.

Table A3.1: Summary of Major Outputs and Activities

Major Activities	Expected Completion Date	Major Outputs	Expected Completion Date
PPTA core team mobilization	31 Jan 2016	PPTA inception report	31 Mar 2016
Technical assessment	31 May 2016	Design feasibility report	31 May 2016
Economic appraisal	15 Jun 2016	Economic analysis report	15 Jun 2016
Prepare works turnkey tender	15 Jun 2016	20% works tender floated	1 July 2016
Safeguards assessment	31 Jul 2016	Loan safeguard documents	15 Aug 2016
Review of PMDC submission 1	31 Aug 2016	PMDC RFP issued	15 Sep 2016
Design supervision	31 May 2017	Design review report	31 May 2017
PPTA completion	31 Dec 2017	PPTA Final Report	30 Jun 2017

PMDC = program management and design consultant; PPTA = project preparatory technical assistance; RFP = request for proposal.

Source: Asian Development Bank.

C. Cost Estimate and Proposed Financing Arrangement

3. The PPTA is estimated to cost \$1,050,000 equivalent, of which \$1,000,000 equivalent will be financed on a grant basis by ADB's Technical Assistance Special Fund (TASF-Others). The use of TASF is required to expedite loan processing and meet the government's development schedule. The government has been advised that approval of the PPTA does not commit ADB to financing any ensuing investment program. The government will provide counterpart support in the form of counterpart staff, office and housing accommodation, office supplies, secretarial assistance, domestic transportation, provision of office space, communication facilities for consultants, surveys, and other in-kind contributions. The detailed cost estimate is presented in Table A3.2.

Table A3.2: Cost Estimates and Financing Plan

(\$'000)

Item	Total Cost
Asian Development Bank^a	
1. Consultants	
a. Remuneration and per diem	
i. International consultants	570.9
ii. National consultants	127.6
b. International and local travel	47.5
c. Reports and communications	10.0
2. Workshops, training, seminars, and conferences ^b	
a. Training program	25.0
b. Farmers consultations workshop	5.0
3. Vehicle ^c	15.0
4. Surveys	100.0

Item	Total Cost
5. Miscellaneous administration and support costs	10.0
6. Contingencies	89.0
Total	1000.0

Note: The technical assistance is estimated to cost \$1,050,000 equivalent, of which contributions from the Asian Development Bank are presented in the table above. The government will provide counterpart support in the form of counterpart staff, office accommodation, office supplies, surveys and data. The value of government contribution is estimated to account for 5% of the total TA cost.

^a Financed by the Asian Development Bank's Technical Assistance Special Fund (TASF-Others sources).

^b Workshops, training, seminars, and conferences

Purpose	Venue
Micro-irrigation trainings/consultation	India/Madhya Pradesh
Pressurized irrigation management training	Regional

^c Vehicle

Rental for field work	6 months
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Source: Asian Development Bank estimates.

D. Consulting Services

4. The PPTA will be implemented from 1 January 2016 to 31 December 2017. A total of 54 person-months of consulting services will be provided, of which 25 person-months will be individually recruited international consultants and 29 person-months of national consultants will be recruited through a firm. It is proposed to recruit WAPCOS INDIA as the national consultants through single source selection since it is already contracted by the Water Resources Department Madhya Pradesh (MPWRD) for undertaking advanced project preparation studies. These will be updated under the PPTA and therefore the selection of WAPCOS will provide natural continuation in preparing the investment program. Consultant requirements are shown in Table A3.3.

5. The specialists will be engaged to undertake the PPTA to (i) assist MPWRD to prepare feasibility designs, cost estimates and procurement documents; (ii) undertake surveys and prepare environment and resettlement safeguard documents; (iii) prepare necessary Board documents; and (iv) support MPWRD with supervising detailed design review and approval. The outline terms of reference for the PPTA consultants are described in paras. 6 to 19.

Table A3.3: Summary of Consulting Services Requirement

Positions	Person-Months Required
International	
Team Leader, Water Resources and Irrigation Planning Specialist	7
Pipeline Design Specialist	4
Pumps Specialist	3
Project Economist and Financial Management Specialist	4
Procurement Specialist	3
Irrigation Institutions Specialist	4
National	
Agricultural Specialist	4
Environmental Safeguards Specialist	3
Resettlement Specialist	3
Social Development Specialist	3
Participatory Irrigation Specialist	4
Geographic Information System Specialist	4
Electric power Specialist	3
Hydrologist	3
Project Economist and Financial Management Specialist	2

Source: Asian Development Bank estimates.

6. **Team Leader, Water Resources and Irrigation Planning Specialist** (international, 7 person-months) will (i) manage the PPTA teams and ensure quality control of PPTA outputs; (ii) prepare all PPTA outputs, and MFF and loan documents; (iii) assess the water balances of

the Kundaliya Major Multipurpose Project and Sanjay Sarovar Irrigation Project (SSIP) considering future water availability and demands taking into account cropping patterns, development plans,¹ other users, and climate change; (iv) recommend monitoring and control systems; and (v) assist MPWRD with evaluating bid submissions for the implementation turnkey contract, and reviewing detailed designs.

7. **Pipeline Design Specialist** (international, 4 person-months) will (i) model and optimize KIP's pump and pipe network to minimize capital and operation costs while ensuring optimum water delivery service; (ii) prepare feasibility designs, specifications and cost estimates; and (iii) assist MPWRD with evaluating bid submissions for the implementation turnkey contract, and reviewing detailed designs.

8. **Pumps Specialist** (international, 3 person-months) will (i) develop KIP's layout of pumping stations and pressurized pipe network and preparing feasibility designs and cost estimates; (ii) advise on options for optimizing energy usage and maximizing savings in the design and operation of KIP; and (iii) assist MPWRD in evaluating bid submissions for the implementation turnkey contract, and reviewing the contractor's detailed designs.

9. **Project Economist and Financial Management Specialists** (international, 4 person-months and national 2 person-months) will (i) undertake an economic analysis in accordance with ADB's Guidelines for the Economic Analysis of Projects (1997), (ii) identify the economic risks associated with the investment program and undertaking a sensitivity and risk analysis, (iii) undertake financial sustainability analysis of KIP; (iv) prepare the costing of the investment program and project 1, and (v) undertake a financial management assessment of MPWRD.

10. **Procurement Specialist** (international, 3 person-months) will (i) undertake a procurement assessment of MPWRD; (ii) assess the procurement risk and facilitating appropriate processes to mitigate those risks; (iii) prepare the project 1 procurement plan; (iv) advise on procurement methods for project 1 works; (v) prepare master bidding documents; and (vi) assist with contracting actions, and supporting MPWRD with evaluating bid documents.

11. **Irrigation Institutions Specialist** (international, 4 person-months) will (i) establish the institutional and legal context of this investment program and its linkages with other national initiatives; (ii) review the sector's legislative framework and institutional arrangements, and recommends improvements, if any; (iii) undertake a sector assessment of Madhya Pradesh's water resources and irrigated agriculture sector; (iv) develop an extension program to support the transition to micro-irrigation, and assess the requirements for training and awareness; and (v) develop an institutional framework for performance based management, operation and maintenance of KIP.

12. **Agricultural Specialist** (national, 4 person-months) will (i) assess current cropping systems and farming strategies in KIP and SSIP, (ii) recommend improvements of on-field water management and crop production, and (iii) assess crop water requirements.

13. **Environmental Safeguards Specialist** (national, 3 person-months) will (i) prepare an environmental assessment and review framework for the investment program in accordance to government and ADB requirements as describe in ADB's Safeguards Policy Statement (2009) (SPS), (ii) undertake a rapid environmental assessment for the investment program to confirm the environmental safeguard categorization, and (iii) prepare environmental assessment study for project 1. Together with the resettlement specialist, the environment safeguards specialist will also undertake an assessment of safeguard requirements and implementation for

¹ ADB. 2011. *Technical Assistance for Innovations for More Food with Less Water into Regional Cooperation (TA 7967-REG)*. Manila.

associated facilities, and determine any risk that could affect the successful operation of KIP, and identify potential remedial actions.

14. **Resettlement Specialist** (national, 3 person-months) will (i) prepare social safeguards frameworks for indigenous people and for involuntary resettlement for the investment program, and a resettlement plan for project 1, all in accordance with government regulations and SPS; (ii) undertake a 100% census of the affected people to identify the scope of involuntary resettlement impacts, identify type and detail losses, and identify any impacts to indigenous people as describe in SPS; and (iii) conduct consultations with potential affected people to ensure they are aware of the project's potential impacts on their livelihoods.

15. **Social Development Specialist** (national, 3 person-months) will (i) carry out a poverty and social impacts assessment; (ii) prepare a poverty and social analysis report in accordance to ADB's Handbook on Poverty and Social Analysis (2012); (iii) confirm the gender classification for project 1 and if required prepare a gender action plan; and (iv) prepare a summary poverty reduction and social strategy for the investment program.

16. **Participatory Irrigation Specialist** (national, 4 person-months) will (i) liaise with farmers and water user groups, (ii) obtain feedback from farmers on transitioning to micro-irrigation, and (iii) develop an extension support plan to foster rapid uptake of micro-irrigation.

17. **Geographic Information System Specialist** (national, 4 person-months) will (i) source and develop a digital elevation map of the KIP gross command area; (ii) develop cadastral, land-use and soil layers for the geographic information system database; and (iii) assist PPTA team members for planning layout of KIP system.

18. **Electric Power Specialist** (national, 3 person-months) will (i) assess the impact of KIP on existing power availability; (ii) review existing power transmission systems and advising on required new infrastructure; (iii) prepare feasibility designs for power infrastructure (including a new solar farm), cost estimates, and specifications; (iv) advise on options for optimizing energy usage; (v) recommend climate change mitigation initiatives; and (vi) assist MPWRD in evaluating bid submissions for turnkey contract, and reviewing the contractor's detail designs.

19. **Hydrologist** (national, 3 person-months) will (i) undertake hydrological analyses for both KIP and SSIP including an assessment of climate change; and (ii) assess the surface and groundwater water availability.

E. Implementation Arrangements

20. MPWRD will be the executing agency for the PPTA. Consultants will be mobilized in a staggered manner with a focus on prioritizing the advance actions on (i) undertaking requisite surveys and investigations, and due diligence on technical and economic matters; (ii) supporting civil works contract procurement; and (iii) recruiting the program management and design consultant. Disbursement under the PPTA will be in accordance with ADB's Technical Assistance Disbursement Handbook (May 2010, as amended from time to time). The proposed PPTA processing and implementation schedule is listed in Table A3.4.

Table A3.4: Technical Assistance Processing and Implementation Schedule

Major Milestones	Expected Completion Date
Concept paper clearance (including PPTA)	December 2015
Consultant mobilization	January 2016
Completion of PPTA	December 2017

PPTA = project preparatory technical assistance.

Source: Asian Development Bank estimates.