

RISK ASSESSMENT AND RISK MANAGEMENT PLAN

Risk Description	Risk Assessment	Management Measures or Risk Management
A. Political		
Changes in government affects commitment to developing PPP for irrigation	High	<ul style="list-style-type: none"> (i) ADB maintains close dialogue with the government and other stakeholders to ensure commitment remains. (ii) Project communication strategy keeps farmers and local politicians committed
B. Transboundary		
Water availability in the river is decreasing because of increased uptake from upstream countries	Medium	<ul style="list-style-type: none"> (i) Government of Bangladesh pursues international dialogue on transboundary water sharing agreement through the Joint River Commission. (ii) The project increases water use efficiency and water productivity. (iii) The project does not increase irrigated area beyond existing command areas.
C. Institutional		
BWDB personnel resist transfer of management, operations, and maintenance to private operators	High	<ul style="list-style-type: none"> (i) BWDB field staff are provided opportunities to join private operators. (ii) Project communication strategy ensures farmers and BWDB staff stay committed to the change and support IMO option.
Private sector is reluctant to engage in PPP for irrigation	High	<ul style="list-style-type: none"> (i) The project follows a two-stage approach. First stage financed by the project will establish the sustainability of the scheme. (ii) There is thorough risk analysis and allocation of the risks to the parties that can best control it. (iii) Government finances the viability gap. (iv) Communication campaign enhances private sector awareness on the project objectives and PPP approach.
D. Environmental and social		
Farmers object to paying for water delivery (GKIP and TBP)	Medium	<ul style="list-style-type: none"> (i) GKIP and TBP design involve intensive consultation with farmers and follow a participatory modernization approach. (ii) Farmers of GKIP and TBP visit Barind Multipurpose Development Authority irrigation system and Muhuri irrigation scheme.

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Private pump operators protest and oppose the modernization program (MIP)	Medium	<ul style="list-style-type: none"> (i) Intensive consultation during the project design and implementation. (ii) Private operators offered to be recruited by the IMO as pump operators.
Climate change affects the performance of the irrigation scheme and endanger the financial sustainability of the IMO	Medium	<ul style="list-style-type: none"> (i) Disaster and climate-change-related risk reduction measures are incorporated into the design criteria. (ii) Risk allocation is clearly defined in IMO contract, with mitigation measures.
E. Project Management BWDB does not provide adequate staff to the PMU	Medium	<ul style="list-style-type: none"> (i) Specific loan covenant is provided to ensure the Ministry of Finance supports BWDB staff requirement for the PMU, including recruitment from the market if required. (ii) PMU staff will be supported with experienced project management consultants and will receive specific training in ADB procurement and disbursement procedures.
Tension arises between PMU, IMO, and farmers	Medium	<ul style="list-style-type: none"> (i) An implementation coordination committee is established to resolve potential conflict in MIP. (ii) Project communication strategy ensures stakeholders are kept aware of the project achievements and issues.
Delayed payment to the consultants and contractors	Medium	<p>Standard operating procedures (time and responsibilities of payment, interest on delayed payment, etc.) will be agreed to expedite processing of contractors' claims. Adequate provisions will be included in the bidding documents. Payments to the contractors and consultants by ADB's direct payment method have been agreed with the EA. ADB will monitor payments to the contractors and will facilitate direct payments, wherever required.</p>
Unsatisfactory financial management	Medium	<ul style="list-style-type: none"> (i) PMU accounting staff will receive training in ADB procedures

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Low quality of civil works due to corruption	High	<ul style="list-style-type: none"> (ii) Internal auditing of the project will be prioritized and auditing procedure strengthened. (iii) Computerized accounting will be adopted and staff trained.
F. Technical Power supply does not meet pumping requirement and endangers MIP modernization efficiency	Medium	<ul style="list-style-type: none"> (i) Increased transparency through the project communication strategy. (ii) Independent construction supervision. (iii) Provision of procurement consultant expertise. (iv) Reduced number of contracts. (v) Financial and procurement activities are centralized in Dhaka PMU.
Price increase in farm inputs, power, and/or decrease in farm gate prices endanger the financial sustainability of the IMO	Medium	<ul style="list-style-type: none"> (i) Double pumping capacity installed to allow faster pumping if load shedding is higher than project estimates. (ii) Existing private diesel pumps kept mobilized to provide emergency backup. (iii) 60 ha solar pumping piloted under MIP; first 2,000 ha modernization and may be expanded if successful.
Price increase in farm inputs, power, and/or decrease in farm gate prices endanger the financial sustainability of the IMO	Medium	<ul style="list-style-type: none"> (i) The project through the IMO supports farmers' organizations for collective purchase and/or production of quality farm inputs and commercialization of the production. (ii) Risk allocation clearly defined in IMO contract with mitigation measures.
Overall	Medium	

ADB = Asian Development Bank, BWDB = Bangladesh Water Development Board, GKIP = Ganges-Kobadak Irrigation Project, ha = hectare, IMO = irrigation management operator, MIP = Muhuri Irrigation Project, PMU = project management unit, PPP = public-private partnership, TBP = Teesta Barrage Irrigation Project.
Source: Asian Development Bank.