# INDIA: Maharashtra Resilience Development Project Appraisal Mission

# March 24–28, 2025

# **Aide Memoire**

### I. INTRODUCTION

- 1. A World Bank team<sup>1</sup> carried out the appraisal mission for the Maharashtra Resilience Development Project (MRDP) from January 24 to 28, 2025. The mission's objectives were to: i) appraise the project preparation progress; ii) advance technical discussions on critical activities; and iii) ensure fulfilment of appraisal and readiness criteria.
- 2. We thank the Government of Maharashtra (GoM), and in particular the support and collaboration extended by the Maharashtra Institution for Transformation (MITRA), the Water Resources Department (WRD), the Relief and Rehabilitation Department (R&R), and the Municipal Corporations of Sangli (SKMC), Kolhapur (KMC), and Ichalkaranji (IMC). This Aide Memoire summarizes the findings and observations of the World Bank team and agreements reached, as discussed at the wrap-up meeting on March 27, 2025.

#### II. PROJECT DATA AND MILESTONES

#### Table 1: Key Project Data

Government Request	Proposed Financing	Implementation Period			
GoM submitted the Preliminary Project Proposal (PPR) to the Department of Economic Affairs (DEA) in May 2023	IBRD: US\$280 million				
Screening Committee of DEA approved the project proposal on December 19, 2023	Counterparts: US\$120 million				
Proposed Project Development Objective (PDO)					
To strengthen multi-hazard climate and disaster risk management and institutional capacity for Maharashtra's resilient development.					
	Implementing Agenci	es			
Proposed Components	Project Management MITRA	Unit (PMU):			
	Project Implementation	on Unit (PIU)			

<sup>&</sup>lt;sup>1</sup> The mission was led by Jolanta Kryspin-Watson (TTL, Lead Disaster Risk Management [DRM] Specialist, virtual), Anup Karanth (Co-TTL, Senior DRM Specialist), and included Abhas Jha (Practice Manager), Savinay Grover (Senior FM Specialist), Neha Vyas (Senior Environmental Specialist), Yukio Tanaka (Senior Water Resources Specialist), Sheena Arora (DRM Specialist), Tjark Gall (Urban Resilience Specialist), and Eugene Gurenko (Senior Disaster Risk Financing and Insurance Consultant), and was supported by Atul Khurana (Senior Program Assistant).

Climate-Informed Flood Risk Management	PIU WRD (MKVDC)
Multi-Hazard Resilience in Districts and Cities	PIU Sangli (SMKMC), PIU Kolhapur (KMC), PIU Ichalkaranji (IMC)
Upgrading Emergency Management Capacities and Early Warning Systems	PIU R&R
Private Capital Mobilization for Disaster Risk Financing	PIU MITRA
Implementation Support and Knowledge Management	PMU MITRA & PIUs

#### III. Preparation Progress

- 3. <u>Status of DEA Readiness Criteria:</u> The mission discussed the status of project preparation, particularly considering DEA's readiness criteria of having 30 percent of civil work investments (about US\$120 million) ready to be awarded before the authorization for negotiations, planned for May 30, 2025. As agreed during the preparation mission, the teams will aim to have at least 35 percent of the investments ready to account for externalities such as exchange rate fluctuations and failure to attract competent bidders. The following investments have been identified as contributing to the readiness criteria:
  - 4. <u>Component 1 (MKVDC)</u>: Rehabilitation work of Radhanagari dam (US\$19 million) and replacement of Sangli KT weir (US\$13 million) are under preparation in fast-track. The DPRs will be shared with the Bank by April 9, draft ESIA-ESMP (including Cultural Heritage and Occupational Health and Safety Management aspects) by April 25, and draft request for bidding (RFB) by April 30. The expected date for tendering is May 15. MKVDC and MITRA will ensure to address the letter from MoJS (Ref: I/88949/2023; Subject: PPR-12090 titled "Maharashtra Resilience Development Project (MRDP)" -in-Principle approval-reg.) along the preparation of civil works. For the work on Radhanagari dam, MKVDC will consult with the Dam Safety Organization of WRD, Maharashtra to ensure compliance with National Dam Safety Act 2021 and Bank's dam safety policy under ESS 4.
  - 5. <u>Component 2 (Municipal Corporations)</u> (estimated US\$100 million): DPRs for stormwater drainage upgrades in Sangli city and Kolhapur city are being finalized based on inputs from environmental management perspective for minimizing impacts on health and safety. It was agreed to share the bid document with the World Bank by April 8, hold a contractor's conclave and initiate tender by April 10, followed by a pre-bid meeting on April 17.
  - 6. <u>Component 3 (R&R)</u> (estimated US\$25 million): In preparation for negotiations, R&R PIU will prioritize initiating the tender for the following contracts: (1) Integrated Emergency Management System, (2) District Emergency Operations Centers, and (3) Disaster Resilient Network. The required EHS aspects (commensurate to the nature and location of works and as laid out in the ESMF) will be integrated into the DPRs and bid documents prior to invitation of bids.
- 7. <u>PMU and PIU Staffing:</u> The mission noted that while the Nodal Officers from PMU and PIUs have been designated, experts on-boarding is only partially done (see Annex 2). It was agreed that MITRA will share a staffing plan matrix with the Bank indicating all the identified positions in the PMU and

PIUs, their scope of work, status and details of experts hired in these positions by April 10 and complete all hiring by April 30.

#### IV. Component-Specific Progress and Agreements

- 8. The following section presents the component-wise activities that were agreed during the mission, as well as their status:
- Component 1 Climate-Informed Flood Risk Management (US\$130 million): This component targets reducing the fluvial flood risk in the upper-Krishna sub-basin through hard and soft interventions.
- 10. <u>Sub-component 1a (Reservoir Operations & Flood Forecasting)</u>: Enhancement of climate-informed reservoir operation system (CIROS) including the upgrade of the Real-Time Data Acquisition System (RTDAS) and integration with reservoir operation system, Real-Time Stream Forecast (RTSF) and policy reforms for revision of the ROS operation manual. The upgraded CIROS will harness state-of-art information technologies such as smart sensors, AI-driven forecasting, and multi-reservoir operation optimization.

**Status:** The mission discussed the concept design of CIROS submitted by MKVDC prior to the mission and requested MKVDC to clarify the transition plan from existing MIKE-based flood forecasting system to HEC-based system. The selection of Project Management Technical Consultant (PMTC) that is also responsible for the detailed designs of upgraded CIROS is at evaluation stage with expected contract award in May 2025.

11. <u>Sub-component 1b (River Works)</u>: i) river training for Krishna and Panchganga rivers (cross section restoration, river widening, removal of rock outcrops, construction of flood bypass at meandering river sections and embankment reinforcement), ii) replacement of old weirs that obstacle the flood flow with modern infrastructures, iii) rejuvenation of existing natural drainage systems (nalas) to enhance flood retention capacity, iv) installation of sluice gates or inflatable rubber dams at the confluence to prevent the backflow in tributaries, v) replacement of spillway gates of Radhanagari Dam, vi) restoration of minor irrigation (MI) tanks to enhance the capacity to capture the flood discharge from free catchment and vi) implementation of any nature-based solutions (NBS) identified through a scoping study.

**Status:** The work of DPR consultant for the river works, JV Tractebel Engineering and Xplorer, is underway and has submitted the inception report. The mission discussed the budget allocation among the proposed interventions and agreed to implement the river works in a phased manner, with the current project investments focusing on feasibility studies and implementation of quick results interventions. The Water Resources Department of Maharashtra and the Bank team agreed to hold a monthly progress review meeting to ensure timely preparation and implementation. It was agreed during the mission that the rehabilitation of minor irrigation tanks (MI tanks) will be undertaken by WRD. The rehabilitation of Radhanagari dam and modification of Sangli KT weir will be tendered in an expedited manner to be counted as the works to satisfy DEA's project readiness criteria. This will include preparation of draft ESIA-ESMP (including Cultural Heritage and Occupational Health and Safety Management aspects) and consultations with key stakeholders, with findings/mitigation measures integrated into the bid document. In parallel, MKVDC will consult with the Dam Safety Organization of WRD Maharashtra to ensure compliance with the National

Dam Safety Act 2021 and Bank's dam safety policy (ESS 4), including independent dam safety assessment and review by the panel of experts (PoE) on dam safety.

- 12. Use of Artificial Intelligence the Project Implementation Plan (PIP) will refer to the application of "trustworthy AI" concept into the relevant project activities (such as AI-supported flood forecasting), incorporating any guidelines or principles that India/Maharashtra may have adopted on AI and/or some of the principles from frameworks to which India is a party.
- 13. Component 2 Multi-Hazard Resilience in Districts and Cities (US\$186 million): This component will undertake both city and district-scale actions in downstream areas of the upper Krishna subbasin which were heavily impacted during the 2019 floods and face evolving risks in the context of climate change and have high exposure of public and private assets.
- 14. <u>Sub-component 2a (</u>Urban Flood Risk Mitigation): A program of flood risk mitigation measures will be developed for Kolhapur, Sangli, and Ichalkaranji cities based on climate change-informed flood risk assessments and development of high-resolution flood maps with a focus on green and grey measures that also offer co-benefits for heat mitigation. This will include upgrading of stormwater drainage network, culverts, desilting of city *nallahs*, and nature-based solutions (NbS) that integrate the cities' parks, lakes, and other multi-use urban spaces.

**Status:** The DPRs for the stormwater drainage investments in Kolhapur and Sangli are undergoing finalization based on inputs during the mission, including on the separation of the NbS activity into a separate bid to enable its design in a way that incorporates principles of sustainability with respect to the plantations, public use and revenue generation. Detailed guidance was provided for the finalization of the ESIAs and ESMPs for these two priorities works. This included use of HDD to avoid disruption to critical services/receptors, management of desilted materials and wastes from drains/nallahs (including testing, handling/storage protocols), need for inclusion of EHS related line items in the bid documents (including for traffic and worker safety), IPM requirements for plantation works, construction management and sequencing to minimize inconvenience to citizens and communication and disclosure of information. The bid selection for DPR consultant for Ichalkaranji has been completed and the work order will be issued before April 7, 2025.

15. <u>Sub-component 2b (Landslide Risk Mitigation)</u>: This activity will include landslide risk assessments and a mix of mitigation, monitoring, and early warning related investments in eight selected landslide hotspots in Kolhapur district. Given the variance across these sites in terms of landslide triggers, severity and size of slides, and exposed elements at risk (residential settlements, pilgrims, infrastructure, and agricultural land), a systematic approach to investment design will be adopted including development of Landslide Hazard Zonation Maps and Landslide Risk Assessment Maps, developing a catalogue of different treatment measures ranging from engineering (low to medium to heavy), non-engineering measures, and bio-engineering measures / vegetative measures (such as grass planting, conservation plantation, mulching, bamboo planting, buffer strips, palisades, brush layering etc.) together with an evaluation of design alternatives for each site. The DPR and Bidding Document for these works will include commensurate E&S assessment and management plans.

*Status:* The initiation of bid for the DPR consultant for landslide mitigation is long pending and it was agreed that this will be undertaken before April 10, 2025.

- 16. Component 3 Upgrading Emergency Management Capacities and Early Warning Systems (US\$43 million): This component will strengthen multi-level emergency preparedness and response capabilities.
- 17. Sub-component 3a (District and City EOCs): Upgrade of 36 district and 3 city emergency operation centers with state-of-the-art command and control facilities for improved situational awareness and decision-making in addition to investments in resilient communication networks between the different EOCs. The deployment of the Integrated Emergency Operation Center Management System (IEMS) will be undertaken as a crucial element of the District Emergency Operations Center (DEOC) operations with an eye to equipping the EOCs with capabilities of a robust Multi-Hazard Impact-Based Early Warning System. The DPRs and bid documents for these works will include commensurate EHS assessment and management measures.

*Status:* It was agreed that the following four tenders will be published by April 10, 2025: Integrated Emergency Management System, Disaster Resilient Network, Modernization/Upgradation of EOC Services.

18. <u>Sub-component 3b (Early Warning and Risk Assessments)</u>: Investments in early warning (landslides, floods), dissemination (broadcasting of impact-based forecasts) and action (community-based capacity building). This sub-component will also include the development of climate-informed multi-hazard risk assessments for districts using innovative approaches such as remote sensing and earth observation, feeding into the systems developed in the EOCs as an integrated digital platform for resilience-building and resilient development planning.

**Status:** The need for establishing an effective baseline for early warning in the state was discussed during the mission, including its coverage, inclusion, sources and adequacy as well as the nature of early action. Dept. of R&R will anchor this study and use it to inform the design of activities under this sub-component.

- 19. Component 4 Private Capital Mobilization for Disaster Risk Financing (US\$19 million): The team met with the representatives of MITRA to discuss the final design features of Component 4, including (a) the staffing of PIU at MITRA, (b) the component procurement plan, (c) the component project implementation plan, and (d) TORs for main technical activities to be procured over the next six months. The agreements reached with the project counterparts are reflected in the updated Component 4 procurement plan, which includes the final PIU staffing schedule and the final list of technical activities to be financed by the project. It was agreed that by the end of April 2025, MITRA will hire an insurance consultant to carry out a demand assessment for insurance and banking products to be supported under the project. The demand assessment will also include detailed product specifications along with product terms of conditions.
- 20. Extensive technical discussions were held with representatives of insurance companies and banks on the type of climate and disaster financial products to be supported by the insurance premium subsidies and loan rebates financed under Component 4. It was agreed that the final list of climate and disaster financial products eligible for loan rebates and insurance premium subsidies will be produced by an insurance consultant hired by MITRA upon completion of a demand study. The preliminary list of products eligible for premium subsidies and loan rebates is as follows:
  - a. FLEXA home insurance with a flood coverage endorsement for homeowners.

- b. FLEXA business inventory protection and business interruption insurance with a flood coverage endorsement for merchants.
- c. Parametric insurance coverage against loss of income due to excessive precipitation for MSMEs.
- d. Parametric insurance coverage against loss of income due to extreme heat for MSMEs and gig workers.
- e. A 'top-up' housing loan for homeowners with an existing mortgage loan to finance property climate proofing.
- f. A home equity improvement loan for homeowners without an existing mortgage loan to finance property climate proofing.
- 21. Component description as in the draft Project Appraisal Document (PAD): This component aims to reduce the financial impact of increasingly frequent climate disasters, e.g., extreme temperatures, heat waves, and floods, on both the State and its population by mobilizing private capital to climateproof housing and improve the financial resilience of homeowners and MSMEs through private insurance. These two groups are especially vulnerable to economic losses from disasters but currently lack sufficient financial protection. By engaging banks and insurers, the component will promote innovative, market-based disaster risk financing solutions, reducing long-term dependence on public funds. It will support affordable insurance and financial products, diversify funding sources, and expand access to financial protection. Collaboration between financial institutions, insurers, and policymakers will help scale investments in resilient infrastructure and incentivize risk reduction among vulnerable communities. Public awareness and financial literacy campaigns will further address residual risks at the household and MSME levels. As an innovation incubator, MITRA will lead the piloting of disaster risk financing initiatives. Over the course of the Project, effective pilots will be scaled and integrated into government programs, including the institutionalization of the Maharashtra Resilience Financing Program (MARP), while less successful pilots will be phased out. The component will finance the following state-level activities:
- 22. Conducting Analytics and Informing Government Policies on Private Capital Mobilization (Total: US\$0.75 million; IBRD: US\$0.525 million; GoM: US\$0.225 million), through development of analytical tools, guidelines, and technical studies. These will evolve throughout the project duration and likely include demand assessments for the climate finance products to be supported under the Project, a contingent liability monitoring framework to track government-backed financial instruments and conduct stress-testing of fiscal exposure to disasters, and a state risk financing strategy that assesses suitability of other mechanisms such as climate/catastrophe bonds and catastrophe insurance pooling. One study will explore and recommend a structure for using existing government funds to finance grants to homeowners' associations to climate-proof their properties through small neighborhood projects, e.g., by building a micro-drainage, facilitated by MITRA.
- 23. Establishing the Maharashtra Resilience Financing Program (Total: US\$17.55 million; IBRD: US\$12.285 million; GoM: US\$5.265 million; Commercial Financing: US\$220 million) to provide financial incentives for homeowners and MSMEs to invest in climate-proofing their homes and businesses and increase their financial resilience to disasters through insurance. A long-term sustainability plan will be developed to phase out subsidies as market readiness grows, with a transition strategy to integrate MARP's financial solutions that remain economically efficient for the

GoM into existing disaster financing mechanisms. The specific activities financed under this subcomponent include but are not limited to:

- a. Provision of partial rebates to homeowners and MSMEs that took out home or property improvement loans from commercial banks (accredited financial institutions) to finance climate-proofing of housing and business assets. PCM of US\$200 million is estimated based on 10,000 loan rebates of on average US\$1,000 for loan sizes of US\$20,000.
- b. Insurance premium subsidies for qualifying catastrophe insurance products provided by accredited insurance companies (e.g., parametric insurance against income loss during heatwaves, insurance coverage for climate hazards linked to mortgages or home-improvement loans). The long-term viability of the premium subsidy is based on the take-up and level of premium subsidy for different socio-demographic groups. At midpoint, the uptake and its impact will be assessed against the envisaged benefits and subsidy targeting and rates adjusted accordingly. PCM of US\$20 million is estimated based on 5,000 insurance premium subsidies for shop insurances with average insured value of US\$3,900 and 5,000 income / business interruption insurance premium subsidies with average insured value of US\$100.
- 24. Developing Skills and Building Public Awareness (Total: US\$0.7 million; IBRD: US\$0.49 million; GoM: US\$0.21 million), through skill development activities at existing vocational training programs to ensure sufficient supply of qualified labor for green jobs (e.g., building climate-proofing) and increasing public awareness of disaster and climate finance products and structural improvements that can be financed to enhance the climate and disaster resilience of private dwellings. Public awareness campaigns will be channeled through existing public structures and associations with a focus on building financial literacy, i.e. understanding what the insurance covers and how it works and informing eligible beneficiaries about the subsidy and rebate programs.
- 25. Estimation of US\$220 million Private Capital Mobilization (PCM) under Component 4:
  - a. Loan rebates: US\$200 million (10,000 loans of ~US\$20,000)
  - b. Shop insurance: US\$19.5 million (5,000 insurances at ~US\$3,900)
  - c. Income insurance: US\$0.5 million (5,000 insurance at ~US\$100)
- 26. **Grants Manual as Disbursement Condition:** The guidelines to be included in the Grants Manual remain part of procurement plan, as foreseen before, following relevant principles (transparency, equity, etc.). MITRA and the team discussed and agreed on the Grants Manual to be a disbursement condition for US\$16 million allocated for rebates/subsidies. This will be a stand-alone document and independent of the PIP, as the preparation thereof will be done through a specialized consultancy and take a couple of months. Relevant sections in the E&S documents will describe Component 4 activities, a standard text shall be included in relevant TORs, and a reference in the TOR for the Grants Manual development will outline that eligible activities under the loan rebate program must adhere to existing environmental regulation.
- 27. **Funds Flow, and Products Providers**: It was confirmed that the TOR for a processing platform will be developed. The objectives are to (i) ensure that funds flow directly and seamlessly from the treasury account to beneficiaries (building on existing mechanisms, where possible), (ii) that funds are only released after, e.g., an insurance policy has been purchased and issued, with limitations of cancelation to avoid insurance fraud, and (iii) that large number of transactions can be processed with minimal human impact while ensuring that eligibility is always verified and that auditing is possible (e.g., by having a dashboard with all transactions, access to provided documentation, geo-

data). The process may be as follows: (i) the beneficiary purchases an insurance, (ii) the insurer issues the policy, (iii) the insurer informs MITRA that the policy has been issued, and the beneficiary is eligible, (iv) MITRA pays the subsidy to the beneficiary. The details of paying/reimbursing, paying in parts, having a blocked amount etc., will be defined by the developers of the processing platform in collaboration with banks, insurers, and MITRA. Existing systems such as DBT will be used if/where possible.

- 28. Personal data collection and usage. The PIP will contain a section on the collection and use of Personal Data with provisions to ensure that the activities under the project involving collection, storage, usage, and/or processing of Personal Data are carried out with due regard to the existing legal framework and appropriate international data protection and privacy standards and practices. The PIP will describe applicable legal and regulatory/sectoral framework on the protection of personal data.
- 29. Identification/Selection of Providers. In addition, MITRA was advised to carry out a formal identification and selection process of the financial institutions (banks and insurers) that would be participating in the program. Among other criteria, the companies would be required to demonstrate their fitness for the program by obtaining a letter of 'good standing' from their regulatory authority. The letter must specify that the companies have been in compliance with all existing regulatory requirements.
- 30. Establishment of PIU at MITRA. It was confirmed that MITRA will establish a PIU for the administration of MARP by hiring relevant qualified consultants/staff and/or procuring a third-party program administrator in the implementation stage. The following positions are currently foreseen: (i) Focal point, (ii) Component coordinator, (iii) Technical specialist, (iv) dedicated full-time Financial Expert from PMTC starting on April 15, (v) part-time accountant assigned from MITRA. Additionally, an (vi) individual Insurance Consultant shall be onboarded to support the demand study, product definition, and TOR development.
- 31. **Transitioning Working Group into Advisory Group:** The working group met and while being member of the working group does not come with any advantages; the group should be converted into an advisory group and ensure that all relevant banks and insurances are invited or that there is transparent process to ensure mitigate risks of grievances. This process can be informed by the criteria used for the qualification of banks and insurers that are eligible to participate in the program.
- 32. Awareness Building and Outreach to Vulnerable Groups: Outreach to target vulnerable population is a critical and can be carried out with a three-pronged approach: (i) insurances, banks, and digital payment providers use their own networks, (ii) utilization of the government local offices, and (iii) through associations of vulnerable / target groups. An association of construction workers and MAVIM may be part of relevant partners.
- 33. Vocational Training: The state institution responsible for vocational training provided a list of six relevant existing job profiles, training durations (combining theory, practice, and on-the-job) and costs o (about US\$175 per person): (i) HVAC Technician, (ii) Solar Panel Installation Technician, (iii) Doors & Windows Fixer, (iv) Carpenter: Wooden Doors and Windows with Frames, General Repairs and Maintenance, (v) Rooftop Rainwater Harvesting Entrepreneur, and (vi) Junior Technician Rooftop Rainwater Harvesting. The curricula of all six are to be reviewed to explore how to support them

most effectively. The last two jobs are already classified as 'Green Jobs' under Maharashtra policy/regulation.

- 34. **Partnership Framework:** To enable collaboration with public institutions that represent target groups and providers of vocational training, a formal partnership will be established.
- 35. Next steps (as further detailed in the actions list): The following activities are critical to ensure timely advancements and MARP to become operational within the next 12 months:
  - a. Detailed description in relevant project documents (e.g., SEP, PIP, ESMF).
  - b. Finalization of TOR for insurance advisor and onboarding of financial specialist from PMTC.
  - c. Draft TOR for processing platform, integrating learnings from existing projects (e.g., DAKSH and PoCRA, MahaSTRIDE) and national systems (e.g., Direct Benefit Transfer [DBT]).
  - d. Formalization of advisory group and project partnerships.
- 36. Component 5 Implementation Support and Knowledge Management (US\$22 million). Project and knowledge management activities include i) capacity building, ii) coordination, financial management, procurement, environmental and social risk management, communication, monitoring and evaluation, and stakeholder engagement, and the iii) development of a 'knowledge lighthouse' for knowledge dissemination at state and country level.
- 37. The mission discussed the need for institutionalizing the approaches and innovations emerging from this project under the aegis of MITRA, while also strengthening MITRA as a multi-sectoral convergence platform for resilience-building and enabling growth in Maharashtra. It was agreed to undertake an 'Institutional Strengthening Review' study under the project to develop a roadmap for capacity building and knowledge dissemination. Additionally, scaling up the approaches for climate-informed stormwater drainage planning and investments adopted in this project to other cities in Maharashtra will be explored, including potentially through a state-wide capacity building program. This will include strengthening environment and social risk management capabilities across schemes, irrespective of funding source to embed sustainability aspects deeper into design and implementation of various programs.
- 38. The Project Results Framework was also discussed and agreed during the mission (See Annex 3). In addition to monitoring the indicators identified in the RF, the development of baseline information on property valuation in flood prone areas of Sangli city was identified as a critical action given the emerging data on land that is going to be unlocked for development because of the flood mitigation activities. MITRA will facilitate this analysis with SMKMC.

# V. Fiduciary (Procurement and Financial Management)

- 39. There are pending entity level external audit reports for MKVDC and the three municipal corporations which are the implementing agencies under the Project. It was discussed and agreed that audits for these four agencies will be brought up to date till at least FY 22/23, by April 30, 2025.
- 40. A detailed discussion on the FM arrangements was held with the finance officials of the MKVDC and the three municipal corporations. With respect to the funds flow for the implementing agencies, it was noted that for the state departments, all payments will be made through the state treasury systems and for MKVDC through the exiting IPLA system. For the three corporations, it was agreed that the Virtual Personal Deposit Account or VPDA will be used for the funds flow to the three

Corporations (Maharashtra state Government Regulation dated February 14, 2024). A meeting was held in this regard with the officials of Directorate of Accounts & Treasuries who confirmed that they have created role of Non-DDO in their system, scroll can be provided by Treasury for monitoring actual expenditure, it avoids parking of unused funds in the commercial bank accounts and there is a periodic reconciliation with state AG (A&E).

- 41. A meeting was held to discuss the Project FM arrangement with the Director (Finance) of the R&R Department. He was requested to share the information on budget vs. actuals numbers for the last three years and the delegation of power document. A similar meeting was held with the finance officers of the three corporations wherein they were requested to share: Circular/office order for nomination of FM nodal person by the Corporation for MRDP, Delegation of power document of the corporation, List of various accounts books maintained, e.g., Cash book, bill register, deposit register, Payment approval steps with those responsible from receipt of bill to release of funds, various procurement committees formed and the designation of the committee members and tentative date of completion of LFAD audit. Some part of this information was received from Kolhapur and Ichalkaranji MCs. MKVDC finance nodal officer was requested to advise the accounting treatment on receipt of funds from state government and confirm if a separate project will be created for MRDP in their IPLA system for the recording and reporting of the Project related contracts and transactions.
- 42. It was agreed during the mission that a Project Fiduciary Review (PFR) consultancy will be included in the Procurement Plan and draft ToR prepared by April 30<sup>th</sup>. The PFR consultancy will be procured by MITRA and will be responsible for reviewing expenditure under all components.
- 43. **Procurement.** Discussions were held on procurement packages to be finalized for DEA requirement of 30% readiness criteria. The project team is requested to revise and finalize the Procurement Plan and the PPSD and conduct the early market engagement event for the project. Review of TORs, RFPs, and RFBs to be done with the Bank Procurement Specialist in the coming days.

#### VI. Environment and Social Management

- 44. Risk Categorization. The environment and social risk categorization (ESRC) for MRDP has been revised from 'substantial' (at concept) to 'high' (at appraisal) following the assessment carried out during pre-appraisal mission in January 2025. The change in ESRC was warranted after considering results from preliminary hydrodynamic modeling exercise, which indicate the need of potentially high-risk activities for flood risk mitigation in the Upper Krishna River Basin in Maharashtra. Based on early estimates from the modeling exercise, specific interventions that are under consideration for inclusion in the operation may include: river training/widening for Krishna and Panchganga with cross section restoration along a 200 km stretch, removal of obstructions from the riverbed, construction of flood bypass at meandering river sections and embankment reinforcement, replacement of old weirs that are an obstacle to the flood flow with modern infrastructure, rejuvenation of existing natural drainage systems (nalas) to enhance flood retention capacity and, replacement of spillway gates of Radhanagari Dam (which has heritage value).
- 45. **Potential Environmental Risks/Issues.** While the detailed design and finalization of investments (including exact location for most interventions) are yet to be worked out, adverse environmental impacts are likely to include: i) impacts on ecology and natural habitats both aquatic and riparian; ii) impact on vegetation, plantation and forest areas due to site clearance, tree felling and possible diversion of forest land; iii) impact on flows, water quality and river morphology affecting

hydrological/ecological cycles; iv) dam safety issues for downstream population, v) pressure on natural resources (large quantity of stone required for protection works); v) delays in obtaining regulatory permits and slippages in compliance to conditions therein; vi) disruption to services due to utility shifting; vii) Occupational Health and Safety (OHS) issues, particularly those associated with work in/around water and construction vehicles/machinery movement, viii) direct and indirect impacts on cultural heritage, ix) public/community safety concerns and, x) issues with management of dredged materials. Potential risks/impacts associated with works under Component 2 include: i) loss of trees/vegetation; ii) OHS risks to workers; iii) public/community health and safety risks (around sensitive receptors and in congested urban areas); iv) improper disposal of construction wastes/debris (including possibly contaminated silt and dredged materials from drains; v) increase in air/dust, soil, water and noise pollution during construction; vi) impact on cultural/common property resources and; vii) disruption of services due to utility shifting. For works associated with Component 3, primary issues/risks are associated with e-waste management, energy footprint and life & fire safety risks.

- 46. Potential Social Risks/Impacts. Overall, MRDP does have land-related impacts, but physical displacement and relocation is expected to be minimal. While the technical and geographical scope of river training works will only be known after completion of the flood modelling exercise and preparation of site specific, detailed project reports (DPRs), preliminary estimates suggest that river training works will be carried out over 113 kilometers (including dumping sites) which shares boundaries with 110 villages. This will require about 1119 hectares of land of which 375 ha is expected to be government land and about 745 ha will be private agriculture lands. This will likely impact about 666 households, the majority being marginal farmers. Walk throughs and drone surveys along the river indicate that most of the land along the riverbanks is either fallow land or agricultural crop land with almost no private residential or commercial structures. So physical relocation and displacement is not expected. However, there are likely impacts on some common properties/public utilities such as temples, bathing ghats, cattle sheds, cemeteries, water structures, pump houses.
- 47. **MKVDC will use its previous experience to carry out LA efficiently.** PMU and MKVDC are confident that the impact on private land will be reduced significantly through proactive measures, design changes and prioritization of existing government land. Upgradation of storm water drainage network will temporarily relocate 25 tenant shopkeepers in Kolhapur, as well as a small number of non-title holders (NTH) in Sangli and Ichalkaranji. The ESIA for storm water works has identified impacts on a large number of common properties and public utilities. Locations of landslide risk mitigation sites have been planned, however site-specific surveys and DPRs are yet to be prepared. While physical displacement and loss of land/structures is anticipated to be minimal, the exact impact will only be known once the DPR studies and surveys have been completed. All project affected households, including non-title holders, will be adequately compensated and/or assisted in line with ESS 5, and this has been reflected in the resettlement policy framework.
- 48. **E&S Instruments/Documents and Readiness.** Drafts of Stakeholder Engagement Plan (SEP), Environment & Social Commitment Plan (ESCP), Environmental and Social Management Framework (ESMF), Labor Management Procedures (LMP), Resettlement Policy Framework (RPF), Indigenous Peoples Planning Framework (IPPF) along with Environmental and Social Impact Assessment (ESIA) for priority investments are ready and have been reviewed. The mission has been working closely with PMU to improve the quality of draft E&S documents that have been prepared by transitional

team at PMU with no prior experience of safeguards. During the appraisal mission, extensive inputs and hands-on support were provided to the E&S Counterparts at PMU and DPR consultants of SWD works. The documents will be finalized and disclosed by/before April 25, 2025. Going forward, all DPRs being prepared to meet DEA's readiness criteria need to be accompanied by an ESIA (commensurate to the type of interventions and magnitude of E&S impacts) and budgeted ESMP along with Resettlement Action Plan (if the subproject involves any impacts on land, structures, and livelihoods) and other instrument/s, as needed (reflected in the ESMF).

- 49. **Biodiversity Management.** The mission reconfirmed with PMU and PIUs that no project interventions will be carried out inside designated protected areas (national parks/sanctuaries) exclusion criteria have been reflected in the ESMF and ESCP. Requirements to avoid/minimize/manage biodiversity loss outside protected areas will follow ESS 6, including screening, assessment, along with preparation and implementation of a Biodiversity Management Plan. In the context of proposed works under Component 1, it was agreed that PMU/MITRA will institute a Biodiversity Study for the Upper Krishna Basin by appointing a technically qualified and experienced agency in the next 4 to 6 weeks. The findings from this study will inform planning and design proposed works in the basin and help rationalize time, resources and efforts at the time of ESIA-ESMP, DPR and tender finalization. The Bank team agreed to work with MITRA and MKVDC for the preparation of the ToR for such an assessment.
- 50. **Dam Safety.** For rehabilitation works at Radhanagari Dam (an existing, high hazard, large dam), MITRA and MKVDC will arrange for an independent dam safety assessment, an independent panel of experts, and preparation of dam safety reports in accordance with ESS 4 and Good Practice Note on Dam Safety. Extensive discussions on various facets, including possible dovetailing with efforts being made under DRIP II (an existing national level Dam Safety Project funded by the Bank) were held and agreed upon.
- 51. **Borrower systems on Land Acquisition** (including provisions for negotiated purchase of private land), Resettlement and Rehabilitation, Grievance Redressal, Pollution Control/Management, Cultural Heritage Management will be used partially. Details to this effect are covered in the ESMF.
- 52. Institutional Arrangements and Staffing for E&S Management. Nodal E&S officers have been assigned in the PMU and all PIUs, but it is critical to have qualified and experienced counterparts in place at the earliest given the complexity and high risks anticipated from project interventions. While this issue has been flagged by the task team during previous missions and high-level meetings, the deployment of experts remains pending. This is crucial for a project of MRDP's complexity, as well as for building the institutional capacity within MITRA (which manages multiple projects of MDBs). Positions for environment, social, resettlement, OHS and biodiversity experts to be hired from the market have been agreed and will be included in the HR plan for the project.

#### VII. NEXT STEPS AND AGREED ACTIONS

#### Table 2: Proposed Milestones

Negotiations	Board

06/15/25	07/20/25

The priorities before the negotiations were discussed as follows:

- 1. Reach readiness criteria by May 30, 2025, incl. 30% of civil works (~US\$120M) ready to award
- 2. Meet requirements for E&S readiness:
  - a. Confirm final project activities and implementation arrangements
  - b. Ensure administrative approvals, where relevant
  - c. Include budgeted ESMPs in bidding documents
  - d. Obtain applicable regulatory clearances (incl. CWC)
  - e. Hire and maintain experienced and qualified E&S experts at PMU & PIUs
- 3. Ensuring adequate staffing across all PIUs and secure the relevant admin approvals for project activities

To ensure fast progress in the proposed project preparation, the timely completion of the detailed actions listed in the table below is critical.

#### Table 4: Agreed Next Steps

	Action	Agency	Deadline		
Р	Project-level Key Actions				
P1	Compile all the relevant documentation to support the DEA Checklist.	MITRA	April 2, delayed		
P2	Complete the staffing plan with details, notified positions, ToRs and share with WB.	MITRA	April 2, delayed		
Р3	Fill agreed MITRA positions though TSA.	MITRA	April 30		
Р4	Confirm mechanism for transfer the obligations related to implementation of project activities to corporations/PIUs.	MITRA	April 10		
Р5	Develop a bidding steps schedule for each readiness contract and share with Bank along with live tracking sheet.	MITRA	April 2, delayed		
1	Component 1: Climate-informed Flood Risk Management		·		
1.1	Finalize the DPRs for readiness criteria works (Radhanagari dam, Sangli KT Weir).	,MKVDC	April 9		
1.2	Estimated target values for intermediate result indicators and calculation methodologies.	MKVDC	April 9		
1.3	Draft ESIA and ESMP for readiness criteria works.	MKVDC	April 25		
1.4	Monthly progress review meeting chaired by the Additional	MKVDC	April 30		
	Chief Secretary, WRD Maharashtra.		onwards		
2	Component 2: Multi-Hazard Resilience in Districts				
2.1	Initiate bidding for urban storm water drainage works in Kolhapur and Sangli after due integration of ESHS requirements in the DPRs and the tender documents				
2.2	Issue Letter of Intent to Award for the DPR Consultant for IMC April 10 Ichalkaranji investments				

2.3	Initiate bidding for the DPR consultant for landslide mitigation works	R&R	April 10			
2.4	Initiate PMTC tenders before April 3 and complete staffing by May 15	MCs	April 3, May 15			
3	Component 3: Upgrading State Emergency Management Capacities					
3.1	Initiate bidding for IEMS	R&R	April 10			
3.2	Initiate bidding for Disaster Resilient Network	R&R	April 10			
3.3	Initiate bidding for Modernization/Upgradation DEOCs	R&R	April 10			
3.4	Fill positions agreed through PMTC	R&R	April 15			
4	Component 4: Private Capital Mobilization for Risk Financing 8	Fiscal Resil	ience			
4.1	Carry out a review of flood hazard maps for the State of	MITRA	Mar 31;			
	Maharashtra available for public use		delayed			
4.2	Define detailed activities and PIU setup in PIP, incl. advisory group and project partnerships with other public entities for awareness building and vocational training	MITRA	Apr 9			
4.3	Describe use of personal data following World Bank guidelines in PIP	MITRA	Apr 9			
4.4	Prepare TOR for individual consultant / insurance expert	MITRA	Apr 9			
4.5	Prepare draft TOR for processing platform	MITRA	Apr 30			
4.6	Review and compile relevant similar financing programs that can inform the design of process and guidelines	MITRA	Apr 30			
4.7	Review curricula of relevant vocational training programs and develop training strategy	MITRA	Apr 30			
4.8	Ensure alignment/mandate of component activity under project through, e.g., cabinet approval	MITRA	May 30			
4.9	Formalize project partnerships with relevant agencies	MITRA	May 30			
4.10	Invite members to the Advisory Group through a transparent selection mechanism	MITRA	May 30			
FM/P	Fiduciary (Financial Management [FM] and Procurement [PR])		-			
FM1	Complete statutory audit of annual financial statements for FY20–21 to at least FY 22–23, where possible until FY 23–24	MKVCD, 3 MCs	April 30			
FM2	Designate FM Nodal officers in each of the MCs	MCs	April 4			
FM3	Project Fiduciary Review to be included in the Procurement Plan and draft ToR prepared	MITRA	April 30			
PR1	Share draft Procurement Plan for first 18 months	MITRA	April 8			
PR2	Share draft Project Procurement Strategy for Development MITRA April (PPSD)					
PR3	Share draft Project Implementation Plan MITRA April 15					
ES	Environmental and Social Management					
ES1	Share final Environmental and Social Management Framework MITRA April 25   (ESMF) along with all project level instruments/documents (SEP, ESCP, LMP, RPF and IPPF) incorporating all comments April 25					

ES2	Disclosure of all final E&S project level documents	MITRA	April 25
ES3	Share revised Environment and Social Assessments and Management Plans (ESMP) for Storm Water Drainage Works	MITRA	April 14
ES4	Hire/assign and maintain qualified Nodal E&S Experts	PMU/PIUs	April 30
ES5	Share drafts of E&S assessment and ESMPs for other DPRs relevant for readiness.	MITRA and PIUs	April 30

# Annex 1: List of Officials Met

Name	Designation
Sujata Saunik	Chief Secretary, GoM
Om Prakash Gupta	Additional Chief Secretary, Finance, GoM
Deepak Kapoor	Additional Chief Secretary, Water Resources Department, GoM
Sonia Sethi	Additional Chief Secretary, Relief and Rehabilitation Department, GoM
Praveen Pardeshi	CEO, Maharashtra Institution for Transformation (MITRA), GoM
Aman Mittal together with MITRA PMU Team	Joint CEO, Maharashtra Institution for Transformation (MITRA), GoM
K. Manjulakshmi	Commissioner, Kolhapur Municipal Corporation
Shubham Gupta	Commissioner, Sangli Miraj and Kupwad Municipal Corporation
Satish Kadke	Director of Disaster Management, Department of R&R
Atul Kapole	Executive Director, Krishna Valley Development Corporation
Shreedutt Kamath	State Training and Capacity Building Officer, Dept. Of R&R
H.V. Gunale	Chief Engineer, Pune Division (Nodal Officer for Krishna Bhima Sub-Basin)
Smita Mahne	Executive Engineer, Kolhapur
Ayrekar	Executive Engineer, Public Works Department, Kolhapur
Mr. Yogesh Sawant	Executive Engineer, ITI
Dr. H.T. Dhumal	Chief Engineer, Nodal Officer for Bhima Basin

# Annex 2: Status of Staffing at PMU and PIUs

Sr.	PMU/	Fiduciary Management		Procure	ement	Environment		Social		nent Social		Technical/ Additional Specialist
INO.	PIU	Nodal Officer	Expert	Nodal Officer	Expert	Nodal Officer	Expert	Nodal Officer	Expert	Expert		
1	MITRA	Done	Done (TSA)	Done	Done (TSA)	Done	Done (TSA)	Done	Done (TSA)	In Process, including positions for Component 4 (TSA)		
2	MKVDC	Done	In Process (PMTC)	Done	In Process (PMTC)	Done	In Process (PMTC)	Done	In Process (PMTC)	In Process (PMTC) Additionally, need for: -OHS Specialist -Resettlement Specialist		
3	R&R	In Process	In Process	<tbd></tbd>	In Process	<tbd></tbd>	In Process	<tbd></tbd>	In Process	In Process		
4	кмс	Done	In Process (PMTC)	Done	In Process (PMTC)	Done	In Process (PMTC)	Done	In Process (PMTC)	In Process (PMTC)		
5	ѕмкс	Done	In Process (PMTC)	Done	In Process (PMTC)	Done	In Process (PMTC)	Done	In Process (PMTC)	In Process (PMTC)		
6	IMC	Done	In Process (PMTC)	Done	In Process (PMTC)	Done	In Process (PMTC)	Done	In Process (PMTC)	In Process (PMTC)		

# Annex 3: Appraisal Readiness Table

SI. No.	Action points / Points to check	Agency responsible for compliance	Status of compliance with evidence as applicable
3	Before Appraisal or Fact-Findi	ng Mission	
	i. Institutional structure for project implementation and funds flow arrangement defined and agreed with DEA and MDB.	Project Implementing Agency (PIA)	Institutional structure and funds flow for project implementation have been defined; the PMU and 5 PIUs have been notified and budget heads opened for the same. The project funds are expected to flow through the state government's budget and expenditures management system (BEAMS) to the vendor's account directly in case of government departments. In the case of MKVDC, a BEAMS module called IPDC will be used to make payment directly in the vendor's account. Whereas for the municipal corporations, the funds drawn from the state Treasury in their respective bank accounts will be used for payments. The agreed structure is reflected in the Appraisal PAD (to be agreed with DEA during negotiations).

ii. Designation of PMU/PIUs staff completed and core staff for the project assigned. Key project staff (project director, procurement, FM, safeguard) should be identified early in	ΡΙΑ	The PMUs and PIUs notifications/Government Resolutions identify key positions, and the respective officials deployed for these positions. Some technical staff will be brought on board as a part of the technical consultancies. For environment and social risk management,
		assigning young professionals to support coordination and project preparation. The deployment of qualified and experienced E&S staff is ongoing as a part of the overall project recruitment, including as a part of the PMTCs.
iii. Tenure of key staff should	ΡΙΑ	The deployed GoM employees have fixed tenures
be, to the extent possible, for three years or more.		whereas consultants have renewable contracts.

iv. Procurement plan for the project detailing contract packages, modes of procurement, pre-requisites for awarding the contracts, approval flow chart, decision making structure	PIA	A draft procurement plan has been prepared with details of contract packages, modes of procurement, and timelines and updated as on March 29.
v. Terms of reference (TOR) for all Consultancy contracts including Project Management consultants, shortlisted consultants/consulting firms and documents for prequalification of contractors are prepared approved/reviewed by MDB.	PIA	Yes. (TSA-MITRA) have been hired and three PMTCs (for the 3 municipal corporations) will be tendered by April 10 (ToR ready and received administrative approval) PMTC (MKVDC) will be hired by May 15.
vi. RFP for major/ critical consultancies issued and Technical evaluation for selection of Consultants is completed.	PIA	Three such consultancies are already on board (DPR consultants for river works, storm water drainage (Kohlapur-Sangli) and storm water drainage (Ichalkaranji). For landslide mitigation works DPR consultancy and for IEMS RFP is ready to tender. Initiating of tender aimed at April 10.
vii. Bidding documents for all contracts, to be awarded during first 18 months of project	ΡΙΑ	On track
viii. Land acquisition and resettlement plans are ready, where relevant.	ΡΙΑ	Consultancy will identify the requirements by October 2025.
ix. Budgeting for at least 30% of land acquisition & resettlement requirements has been made.	PIA	Budget for LA and Resettlement cannot be estimated in the absence of detailed designs and DPRs for flood risk control measures. However, an initial allocation will need to be confirmed by Appraisal.
x. Environment Management Plan (EMP) for the first two years of project implementation has been finalized. Initial Environment Examination IEE)/ Environmental Impact Assessment (EIA) were	PIA	Drafts of sub-project ESIAs and ESMPs for SWD works at Kolhapur and Sangli are ready and undergoing Bank's review. For other investments, the ESIAs and ESMPs will be prepared concurrently with engineering designs/DPRs.

completed and approval of MDB secured.		
xi. Relevant Budget/Counterpart Fund provisions, duly approved by the authorities, where required, are made	PIA	Yes.

# Annex 4: Revised Results Framework

# PDO Indicators by PDO Outcomes

Baseline	Closing Period	
Reduced multi-hazard risk in the Krishna River basin		
People benefitting from climate resilience planning, preparation, and/or respons	e (Number of people)	
Jun/2025	Jul/2030	
0	-River: tbc	
	-Landslide: 17,500	
	-SWD: 289,000	
People benefitting from climate resilience planning, preparation, and/or respo	nse - Female (Number of people)	
Jun/2025	Jul/2030	
0	tbc	
➢ People benefitting from climate resilience planning, preparation, and/or respo	nse - Youth (Number of people)	
Jun/2025	Jul/2030	
0	tbc	
Enhanced emergency operations		
People with access to information of improved early warning systems (Number of	of people)	
Jun/2025	Jul/2030	
0	127,700,000	
➢ People with access to information of improved early warning systems - Female	e (Number of people)	
Jun/2025	Jul/2030	
0	tbc	
➢ People with access to information of improved early warning systems - Youth (	(Number of people)	
Jun/2025	Jul/2030	
0	tbc	
Increased financial protection against natural hazards		
People covered by disaster risk finance and insurance (Number of people) CRI		
Jun/2025	Jul/2030	
0	20,000	
>People covered by disaster risk finance and insurance - Female (Number of people) CRI		
Jun/2025	Jul/2030	
0	12,000	
People covered by disaster risk finance and insurance - Youth (Number of people) CRI		
Jun/2025	Jul/2030	
0	500	

# Intermediate Indicators by Components

Baseline	Closing Period	
Climate-Informed Flood Risk Management		
People benefitting from reduced fluvial flood risk (Number of people)		
Jun/2025	Jul/2030	
0	tbc	
Length of river stretch with enhanced flood carrying capacity (Kilometers)	•	
Jun/2025	Jul/2030	
0	tbc	
Multi-Hazard Resilience in Districts and Cities		
Length of enhanced storm water drainage in selected cities (Kilometers)		
Jun/2025	Jul/2030	
0	256 km	
	Kolhapur: 156 km	
	Sangli: 50 km	
	Ichalkaranji: 50 km	
People benefitting from improved urban flood protection infrastructure (Numbe	r of people)	
Jun/2025	Jul/2028	
0	289,000	
	Kolhapur: 55,000	
	Sangli: 174,000	
	Ichalkaranji: 60,000	
Participatory workshops held on nature-based solutions in cities (Number)		
Jun/2025	Jul/2028	
0	6	
Sites with reduced landslide risk (Number)		
Jun/2025	Jul/2030	
0	4	
Better and new jobs (Number)		
Jun/2025	Jul/2030	
0	200	
	NBS: 50	
	Civil works: 50	
	Trained: 100	

➢ Jobs created in project cities - Female (Number)			
Jun/2025	Jul/2030		
0	40		
➢Jobs created in project cities - Youth (Number)			
Jun/2025	Jul/2030		
0	30		
Enhanced Emergency Management and Early Warning Capacities			
Integrated emergency operation center system established with forward and bac	kward linkages with national and state agencies (Yes/No)		
Jun/2025	Jul/2030		
No	Yes		
Emergency operation centers with enhanced operational capacities to serve the	Emergency operation centers with enhanced operational capacities to serve the target population (Number)		
Jun/2025	Jul/2030		
0	39		
	District: 36		
	City: 3		
Early warning systems improved with multi-hazard capabilities (Yes/No)			
Jun/2025	Jul/2027		
No	Yes		
Private Capital Mobilization for Risk Financing			
Maharashtra Resilience Financing Program (MARP) established and operational (	Yes/No)		
Jun/2025	Jul/2026		
No	Yes		
Recipients of loans for climate proofing of businesses and private dwellings (Num	ber)		
Jun/2025	Jul/2030		
0	10,000		
Women-led businesses and households covered by disaster insurance (Number)			
Jun/2025	Jul/2030		
0	5,000		
Participants of training programs on climate adaptation retrofitting works (Number)			
Jun/2025	Jul/2027		
0	500		
Implementation Support and Knowledge Management			
Grievances addressed (Percentage)			
Jun/2025	Jul/2030		
0	95		

Knowledge exchange and dissemination events (Number)		
Jun/2025	Jul/2030	
0	7	

# Annex 5: Proposed Methodology for Estimation of Job Creation

1. Urban resilience investments offer an opportunity to contribute to local economic development and job creation. As underscored in the draft World Bank Corporate Results Indicator (CRI) 'New or Better Jobs' and in recent urban and climate resilience operations, the direct and indirect employment co-benefits of infrastructure, NBS, and DRM are increasingly seen as an integral development outcome. Urban areas are growth engines, but climate risks and environmental degradation often reduce their attractiveness for investment and labor forces, suppress formal employment, and exacerbate informality. By reducing risk and improving livability, well-designed urban interventions can support job creation both directly – through labor-intensive construction and maintenance – and indirectly, by unlocking private-sector activity and improving labor productivity.

2. MRDP contributes to this agenda through a structured results indicator that captures multiple employment dimensions under a consolidated indicator on 'New or Better Jobs.' This includes (i) sustainable jobs created through the operation and maintenance of NBS infrastructure; (ii) temporary jobs generated through civil works during implementation; and (iii) better jobs supported via vocational training, reflecting increased earning potential and employment quality. These channels are estimated using conservative assumptions to ensure practical reporting. The indicator will be tracked across the project lifecycle through implementation data. Additionally, the feasibility of estimating indirect employment effects resulting from improved economic conditions in the project cities will be explored; yet, without its integration into the results indicator targets.

New or better jobs in cities and districts (Number)		
Jun/2025	Jul/2030	
0	Total: 200 (NBS: 50; Civil works: 50; Trained: 100)	
Ø New or better jobs in cities and districts - Female (Number)		
Jun/2025	Jul/2030	
0	Total: 40 (NBS: 30; Civil works: 0; Trained: 10)	
Ø New or better jobs in cities and districts - Youth (Number)		
Jun/2025	Jul/2030	
0	Total: 30 (NBS: 0; Civil works: 10; Trained: 20)	

Table 1: Intermediate Results Indicator for Results Framework

Table 2: M&E Description of Intermediate Results Indicator

New or better jobs in cities and districts (Number)		
	This indicator measures the number of jobs directly created or improved by the Project.	
	Based on an assumption of about 25 NBS across the three cities with 2 people each working	
	on operation and maintenance, 5 job-years per US\$ million (calculated over a span of 30	
	years, i.e. 30 job-year equal 1 job), and 500 people receiving vocational training that	
Description	improves each earning capacity by 20 percent. Jointly, this results in about 200 directly	
	created or improved jobs. Additionally, indirect employment is estimated based on job	
	elasticity and GDP growth due to reduced risk and enhanced attractiveness in the three	
	cities compared to other cities' growth. However, these are not counted under this	
	indicator but may be added based on outcomes of a feasibility study.	
Frequency	Semiannual.	
Data course	Project documentation (for modeled data, i.e. civil works investments, vocational training	
Data source	completed), surveys (for earning capacity increase following training), and employment	

	data (for NBS and EOCs).	
	The direct employment will be based on actual employment data and inputs to the	
	modeled approaches, e.g. US\$ million disbursed for civil works and people trained.	
	Two methodologies can be used to estimate indirect job creation: i) Using the assumptions	
	of currently 500,000 jobs across the three cities, 0.2–0.3 job elasticity, and a GDP growth of	
	0.2 to 0.5. ii) With the addtional assumptions of US\$11 billion GDP in the three cities,	
	US\$168 million infrastructure investments, and a multiplier from infrastructure investment	
Methodology for	(as share of GDP) of 0.36 percent3 a methodology featured in the methodology note for	
Data Collection	jobs can been reproduced. These assumptions will be verified and updated over time.	
	Furthermore, a impact evaluation may be developed, including baseline data collection	
	before project implementation, to compare employment growth in project cities before	
	and after intervention against a control group of similar cities without project investments	
	(difference in difference), controling for external macroeconomic trends affecting all cities.	
	Using secondary labor market data, MSME activity, and tourism/real estate growth	
	indicators, and firm-level data to track business registrations and employment, sectoral	
	trends will be validated.	
Responsibility for	MITRA, and IMC, KMC, SMKMC.	
Data Collection	in sides and districts. Francels (Alexandrey)	
New of better jobs		
Erequency	See above.	
Frequency	Semiannual.	
Data cource	For modeled approaches, no actual disaggregation will be possible during project	
Data source	validate assumptions throughout the project duration	
Methodology for		
Data Collection	See above.	
Responsibility for		
Data Collection	MITRA, and IMC, KMC, SMKMC	
New or better jobs	in cities and districts - Youth (Number)	
Description	See above.	
Frequency	Semiannual.	
	For modeled approaches, no actual disaggregation will be possible during project	
Data source	implementation. A reliable baseline combined with an MTR and a closing survey permit to	
	validate assumptions throughout the project duration.	
Methodology for	See above.	
Data Collection		
Responsibility for NUTRA and INAC KNAC SNAKNAC		
Data Collection	IVITINA, and IIVIC, NIVIC, SIVINIVIC	

<sup>&</sup>lt;sup>3</sup> IMF. 2014. Is It Time for an Infrastructure Push? The Macroeconomic Effects of Public Investment. In: World Economic Outlook, October 2014, Legacies, Clouds, Uncertainties, Chapter 3: October, pp. 75-114, ed. by Abdul Abiad Et al. Washington, D.C.