ADB

Concept Paper

Project Number: 43253
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# India: Karnataka Integrated and Sustainable Water Resources Management Investment Program

Asian Development Bank

# I. THE PROJECT

## A. Rationale

1. The Karnataka Integrated and Sustainable Water Resources Management Investment Program (the Program) aims to establish institutions and systems to manage and sustain the increasingly scarce water resources in a holistic manner, following the modality of multi-tranche financing facility (MFF). Investment support will be provided to modernize existing irrigation infrastructure and expand urban water supply and sanitation (WSS) while strengthening relevant institutions to enhance efficiency, productivity and sustainability in water use. Innovations such as micro irrigation and public-private partnership (PPP) will also be explored and implemented.[1]

2. The state of Karnataka (State) is one of the most water-stressed in India. Although its economy is one of the fastest growing, poverty levels still remain high at 25% of the population in 2004-05. Its surface water has already been substantially abstracted from rivers. Quality of water is deteriorating, along with watersheds and forest that are causing rapid water runoff, soil erosion, and reservoir siltation. Groundwater is also over-utilized in 40% of the districts. Yet the State's annual water use is anticipated to further rise up to 40% by 2025 due to urbanization and other reasons, threatening sustainable economic growth and poverty reduction, within which vulnerable groups including women will be disadvantaged. The impact of climate change, which is anticipated to exacerbate droughts and floods, may further reduce water availability. Effective and integrated water resources management and regulation are critically required to meet the growing water needs while maintaining sound basin water balance and environment.

3. In this context, improving the performance of irrigation remains critical. It accounts for 94% of water use, yet suffers from chronic problems of low efficiency, productivity, farmer incomes, and sustainability. In many cases water is inequitably distributed to irrigate water intensive crops (such as paddy), while crop water use accounts for only 40% of abstraction due to high system loss, causing water stress and deprivation downstream. These are attributable to deficient infrastructure (deterioration due to insufficient maintenance and lack of water control structures), management problems (low service quality of operators and low participation by farmers), and limited effects of promoting water saving crops and practices.

4. Providing safe drinking water and sanitation is a high priority in the State's water as well as poverty reduction agenda. About 84% of the population has access to drinking water, and 38% has access to sanitation facilities. However, there are higher unmet demands: only 25% of urban local bodies (ULBs)[2] can supply the set per capita requirements, and only 11% of ULBs have a functioning sewerage system. Most ULBs have also low efficiency in distribution and high unaccounted for water reaching 30-70%. Meeting the rapidly rising urban and industrial water demands thus remains a critical challenge, along with protecting drinking water supply from other uses and effectively treating, discharging, and reusing the effluents from all sources.

5. The State has progressively developed conducive policy framework to address these challenges, including State Water Policy 2002 (envisaging holistic improvements in its water management systems and institutions) and Urban Drinking Water Supply and Sanitation Policy 2002 (setting out sector targets and reform directions). Irrigation reforms were also initiated with participatory irrigation management (PIM), with the establishment of legally empowered water user associations (WUAs) and progressive transfer of operation and maintenance (O&M) for its sustainability. The State's 11th Five-year plan (FYP: 2008-12) reaffirmed these directions.

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[1] A project preparatory technical assistance (PPTA) to prepare the Program is programmed in 2011 for $1,200,000 and is described in Appendix 4.

[2] ULBs are constitutionally based administrative units that provide basic infrastructure and services in urban areas.

6. Building on these initiatives, the Asian Development Bank (ADB) provided a capacity development technical assistance (CDTA) in 2010 to assist in advancing sector reforms and operations,[3] and preparing a roadmap to improve water management systems towards holistic water management, including the institutional framework and specific functions differentiating regulating, managing, and service proving roles. Strategy and priority programs for the two critical sectors–irrigation and urban water supply and sanitation (UWSS) were also prepared, aiming towards (i) enhancing irrigation performance with infrastructure modernization and institutional reforms for higher "crop per drop" and advancement of PIM; and (ii) expanding UWSS with quality services (including 24 hours a day, 7 days a week supply) and distribution efficiency and O&M sustainability with the advancement of sector agendas such as PPP.

7. The State is willing to initiate the implementation of the steps and programs defined under the CDTA. Their implementation with MFF modality is most appropriate, in view of (i) the above strategic directions that are fully in line with ADB's country strategy for India, Strategy 2020, and Water for All Policy as well as lessons learned in the sector operations;[4] (ii) sound existing sector policy framework and the roadmap prepared under the CDTA providing a path towards its progressive improvements that can be pursued as MFF undertakings under longer-term partnership; (iii) opportunities for investment planning on the basis of river basins that can be undertaken during the PPTA and would fit the sector-type MFF framework; and (iv) higher implementation quality that can be expected from its structure to commit new tranches based on the performance and lessons of the ongoing tranches and the readiness of a new tranche.

## B. Impact, Outcome, and Outputs

8. The Program's impact will be sustainable water security for rural and urban population in the selected river sub-basins in Karnataka. Its outcome will be improved water resources management. The outputs are: (i) institutions and systems set up for holistic water resources management (including regulatory and management agencies, river basin organizations, and planning, monitoring, and decision support systems including the impact of climate change); (ii) existing irrigation schemes modernized with strengthening of management systems and institutions including service providers and WUAs to support higher efficiency, productivity (crop per drop), incomes, and sustainable O&M; (iii) UWSS with higher service standards, operational efficiency, and financial and environmental sustainability; (iv) a range of innovations to enhance basin water balance, such as water saving technologies, waste water recycling (particularly for industrial purposes), and PPP; and (v) sound multidisciplinary Program management systems.

9. The Program will include feasible investments that will meet the set eligibility criteria including economic viability with no major safeguards impacts, following the investment planning and feasibility studies undertaken during the PPTA. Project-1 will include modernizing two major irrigation schemes and extending a few UWSS systems in the upper Tunga-Bhadra sub-basin of the Krishna River basin. Subsequent projects may extend to other water scarce sub-basins.

## C. Investment and Financing Plans

10. The envisaged costs and financing plans of the Program and its project-1 are shown in the following table, which will be further developed under the PPTA. ADB will finance a part of the Program and Project-1 cost from its ordinary capital resources (OCR).

[3] TA No. 7418-IND: Integrated Water Resources Management and Sustainable Water Service Delivery in Karnataka, approved in October 2009.

[4] The ongoing ADB-assisted irrigation loans in Chhattisgarh and Orissa ascertained the need for farmer participation and integrated approach for O&M and agriculture development, with sufficient capacity development. In urban WSS, the State has developed capacities for timely execution with 3 ADB loans, with growing opportunities for enhanced service quality, tariff reforms, and PPP. These will be further assessed in the project design.

**Table 1: Tentative Financing Plan**

| | MFF Program | | Project-1 | |
|---|---|---|---|---|
| **Source** | **Amount** ($ million) | **Percent of Total** | **Amount** ($ million) | **Percent of Total** |
| Asian Development Bank | 300 | 70 | 100 | 70 |
| Co financiers | TBD | TBD | TBD | TBD |
| Government | 130 | 30 | 43 | 30 |
| **Total** | **430** | **100** | **143** | **100** |

TBD = to be determined.
Source: ADB, 2011

### D. Indicative Implementation Arrangements

11. The State is establishing an Integrated Water Resources Management (IWRM) Center (IWRMC) anchored to the Water Resources Department (WRD), which will define and put into operation improved water management and regulatory functions and institutions, through restructuring of the WRD's Water Resources Development Organization. IWRMC will have a Program coordination unit, and execute the component for holistic water management. Within this management framework, irrigation and UWSS components will be executed by Karnataka Neeravari Nigam Ltd. (KNNL, state irrigation company), and Karnataka Urban Infrastructure Development and Finance Corporation (KUIDFC), respectively. For smooth implementation of the multi-sector MFF, each component will have distinct output targets and implementation arrangements. A steering committee chaired by Chief Secretary and comprising representatives from all the concerned departments will be formed for coordinated implementation.[5]

## II. TECHNICAL ASSISTANCE

12. A technical assistance (TA) will be needed particularly to establish and initiate holistic water resources management with capacity development. For this purpose, a TA for Capacity Building for State level IWRM has been included in COBP: India (2012-14) for 2013 (for $500,000). As to irrigation, capacity development would also be needed to cover the area of (i) strengthening institutional setup and capacities to promote PIM; and (ii) revamping technical capacities for modern infrastructure design and operation systems. To realize PPP for UWSS, proper structuring and hands-on support in bidding will be required. The TA might be sought to help the KUIDFC to develop and manage innovative PPP contracts, based on experience under the previous projects. The scope of the TA will be further elaborated during the PPTA.

## III. DUE DILIGENCE REQUIRED

13. The Program preparation will require the following due diligence assessments, which will be undertaken following the existing ADB assistance in the relevant sectors:

(i) **Technical, Economic and Financial.** Feasibility will be assessed (for Project-1, its subprojects, and MFF defining eligibility criteria), including O&M sustainability with cost recovery, and PPP, along with capacities of local contracting industry.
(ii) **Institutional.** Assessment will cover governance (financial management, anti-corruption, and procurement), sector agendas (policy framework, investment plans, institutions and capacities), and undertakings to meet MFF requirements.
(iii) **Poverty and Social.** Assessments will cover appropriate strategy to enhance poverty reduction and social development impacts, and a gender action plan to mainstream gender elements in line with the State's priorities and actions.
(iv) **Safeguards.** Framework and relevant plans for environment, involuntary resettlement, and indigenous peoples will be updated or prepared.[6]

[5] Opportunities for PPP will also be pursued particularly for O&M of UWSS, and including irrigation starting as a pilot.
[6] Involuntary resettlement is expected on a limited scale in relation to UWSS extension and irrigation canal works.

## IV. PROCESSING PLAN

### A. Risk Categorization

14. As per ADB guidelines, the Program is considered as “complex”, in consideration of (i) the loan amount is $300 million and follows MFF modality; and (ii) it is executed by three agencies with three distinct agendas and targets, for which multi-agency coordination is critical. Nevertheless, the State has reasonably developed sector policy and institutional bases with leadership to pursue further requisite reforms. KNNL also has a capacity to plan, design, and implement irrigation infrastructure and past experience of externally assisted projects. KUIDFC also has extensive experience in implementing externally assisted projects, including ongoing ADB-funded loans. These provide a basis for ADB partnership despite complexities.

### B. Resource Requirements

15. The project preparation requires operational staff from Environment, Natural Resources and Agriculture Division (SAER, for overall design, IWRM, and irrigation), Urban Development and Water Division (SAUW, for UWSS), and India Resident Mission. It is estimated that about 15 and 8 person-weeks of field level missions will be required for SAER and SAUW, respectively, including safeguards staff. A PPTA (Appendix 4) will be required to prepare MFF sector roadmaps, feasibility studies of tranche-1 subprojects, and implementation materials.

### C. Processing Schedule

16. Major milestones up to loan effectiveness are listed in Table 2 below.

**Table 2: Proposed Processing Schedule**

| Milestones | Expected Completion Date |
|---|---|
| Reconnaissance Mission | 31 March 2011 |
| Concept paper clearance (VP) | 5 December 2011 |
| Loan Fact-Finding Mission | III July 2012 |
| Management Review Meeting | III September 2012 |
| Loan negotiations (with readiness milestones achieved) | I November 2012 |
| Board consideration | III January 2013 |

Source: Asian Development Bank. 2011.

## V. KEY ISSUES

17. Key issues to be addressed will include (i) effective **multi-sector design** to enable due collaboration across a few state agencies and ADB sector divisions; (ii) advancement of appropriate **reforms for holistic water resources management** with stakeholder consultation to pursue water security objectives; (iii) sound **irrigation program design** with (a) enabling institutional actions for improved service provider performance with WUA empowerment and O&M sustainability (with farmer financing) and (b) cost-effective modernization and supporting measures to ensure higher efficiency and “crop per drop”; (iv) sound **UWSS design** with (a) selection of investments promoting efficient water supply, wastewater treatment and reuse; (b) effective design concept, institutional framework (covering state agencies, ULBs, and private operators), and service standards to enable improved water management and increased operational efficiency, and (c) tariff and other reform measures to strengthen the financial sustainability and manage demands; (v) pursuit for **innovations** (e.g., water saving technologies, recycling and reuse, and PPP for UWSS) and new agendas (e.g., climate change and social dimensions); (vi) assessment and reflection of **lessons learned** in particular to ascertain sufficient capacity development in implementing new agendas (IWRM and PIM); and (vii) **high readiness** to ensure timely implementation and impacts.

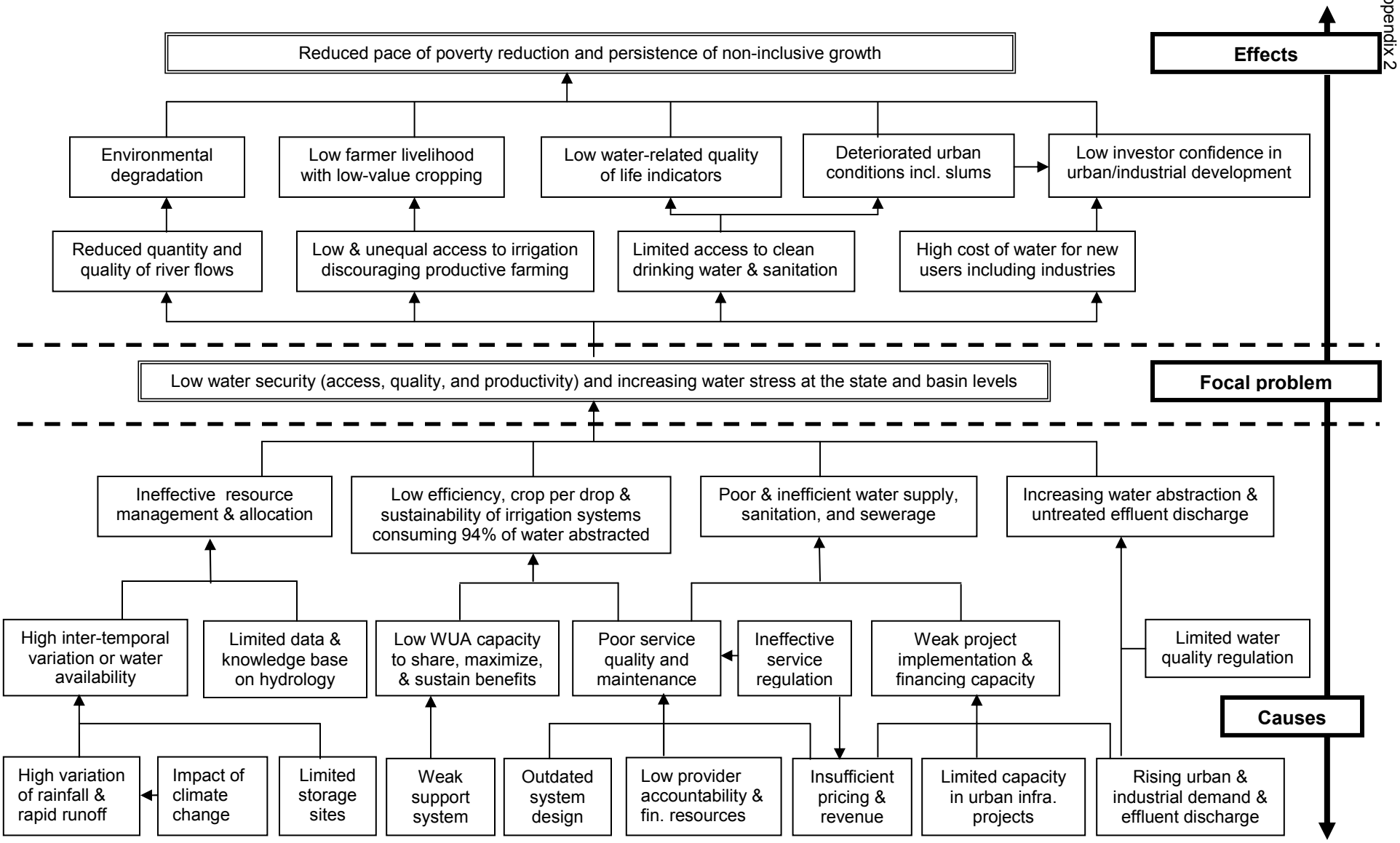
## BASIC PROJECT INFORMATION

| Aspects | Arrangements |
|---|---|
| Modality | Multi-tranche Financing Facility (with appraised subprojects in individual tranches and a list of candidate schemes meeting the set technical, economic, financial, and social and environmental safeguards criteria) |
| Financing | ADB financing will be based on sector investment plans for holistic water resources management, irrigation, and UWSS to be confirmed during the PPTA stage. Envisaged ADB loan amount is $300 million from its Ordinary Capital Resources. |
| COBP/RCOBP | The Program is included in COBP: India (2012–2014) as a firm loan for 2013. |
| Classification | Sector (subsectors): Multi-sector (Agriculture and natural resources [irrigation, drainage, and flood protection; and water-based natural resources management], and Water supply and other municipal infrastructure and services [water supply and sanitation])<br>Themes (subthemes): Economic growth (widening access to markets and economic opportunities; and knowledge, science, and technological capacities); Environmental sustainability (natural resource conservation; and urban environmental improvement); Capacity development (institutional development); Social development (human development) and<br>*Gender mainstreaming: Effective gender mainstreaming*<br>*Climate change: Adaptation (medium: operationalizing holistic water resources management and efficient water use, and incorporation of climate change and adaptation mechanisms); Mitigation (low: Reduced energy requirements through increased equipment efficiency; reduction in methane emissions (where septage may be improperly managed) through introduction of appropriate collection systems and treatment (either aerobic or anaerobic with methane collection and burning for energy recovery)*<br>Targeting classification: General Intervention<br>Location impact: Rural (high) and Urban (high)<br>Safeguards: Environment–B, Involuntary Resettlement–B, Indigenous Peoples–C |
| Risk categorization | Complex |
| Partnership(s) | Food and Agriculture Organization (FAO) of the United Nations[1] |
| Use of a PBA | N.A. |
| Parallel PIU | No parallel PIU will be established. |
| Department and division | SARD/SAER (IWRM and irrigation) and SARD/SAUW (UWSS) |
| Mission leader and members[2] | K. Yokoyama, Principal Water Resources Specialist (Mission Leader)<br>T. Gallego-Lizon, Principal Urban Development Specialist (Co-Mission Leader: UWSS)<br>N. M. Amerasinghe, Environment Specialist<br>R. Slangen, Safeguards Specialist<br>S. Dasgupta, Senior Project Officer (Urban)<br>S. Campbell, Social Development Specialist<br>H. K. Varma, Senior Project Officer (Natural Resources and Agriculture) |

ADB = Asian Development Bank, COBP = country operational business plan, O&M = operation and maintenance, PBA = programmatic based approach, PIU = project implementation unit, PPTA = project preparatory technical assistance, RCOBP = regional country operations business plan, SAER = Environment, Natural Resources and Agriculture Division, SARD = South Asia Department, SAUW = Urban Development and Water Division, UWSS = urban water supply and sanitation

[1] FAO is providing a small TA to assist a part of these agendas, which will be taken into account during the PPTA.
[2] Sustainable Infrastructure Division of Regional and Sustainable Development Department and PPP unit of South Asia Office of Director General will also provide advisory support to reflect innovations and best practices.

## PROBLEM TREE ANALYSIS FOR WATER RESOURCES MANAGEMENT AND SERVICE DELIVERY IN KARNATAKA



## PRELIMINARY DESIGN AND MONITORING FRAMEWORK

| Design Summary | Performance Targets/Indicators [a] | Data Sources/Reporting Mechanisms | Assumptions and Risks |
|---|---|---|---|
| **Impact**<br>Sustainable water security in selected river basins in Karnataka | By 2023<br>• Enhanced access to irrigation by XXha from XXha baseline<br>• Enhance access to drinking water and sanitation by XX and XX people from XX and XX people, respectively<br>• Increased incomes of irrigation schemes by XX% and RsXXX per household.<br>• Improved ecological habitat and river environment (indicators to be defined) | • WRD/KNNL annual reports and scheme monitoring reports<br>• ULB statistics<br>• WRD/KNNL scheme monitoring reports<br>• WMA/WRA annual reports | **Assumptions**<br>• No natural calamities (e.g., droughts) beyond the design return period<br>• Farm-gate prices of crops do not turn excessively adverse |
| **Outcome**<br>Improved water resources management in selected river basins in Karnataka | By 2020<br>• Improved water use efficiency by XX% (irrigate-tion) and XX% (WSS) from XX% and XX%, respectively O&M cost recovery ratio reaches XX% for irrigation and XX% for urban WSS, from XX% and XX%, respectively<br>• Improved productivity of water by RsXX/ $m^3$<br>• Beneficiary perception (including vulnerable groups) of service quality is improved substantially<br>• Water allocation and hydro-logy monitoring system operated<br>• Set basin water quantity and quality targets are met (indicators to be specified) | • WRD/KNNL scheme monitoring reports; KUIDFC annual reports and ULB statistics<br>• Same as above<br>• WRD/KNNL scheme monitoring reports<br>• Regular beneficiary perception surveys by WRD/KNNL<br>• WMA/WRA annual reports<br>• WMA/WRA annual reports | **Assumptions**<br>• Continued political support to sustain the reforms undertaken<br>• No significant change in hydrological regime and basin water availability |
| **Outputs**<br>1. Institutions and systems established for holistic water resources management at state and basin levels | By 2015<br>• WMA and WRA are set up and function with improved management and regulatory (allocation, pricing, etc.) functions<br>• RBOs are set up with key stakeholders including XX% vulnerable groups and women representation<br>• RBO key functions defined and made operational<br>• State water plan and XX basin water plans prepared | • WMA/WRA annual reports (based on their M&E systems)<br>• RBO annual reports (based on their M&E system)<br>• Same as above<br>• State water plan and basin plan documents | **Assumption**<br>• Sufficient leadership and stakeholder support is maintained to put into operation the reform measures |

| Design Summary | Performance Targets/Indicators [a] | Data Sources/Reporting Mechanisms | Assumptions and Risks |
|---|---|---|---|
| 2. Irrigation infrastructure modernized and management systems and institutions strengthened | By 2020<br>• XX irrigation schemes (XX ha area) modernized with effective operation system<br>• XX WUAs strengthened with XX% vulnerable group and women participation in members and executive committees; minor canal O&M transferred; and improved water distribution and cropping practices<br>• WRD reform plan fully implemented<br>• WUA operation framework improved as appraised<br>• O&M cost recovery plan (to be defined) implemented | • WRD/KNNL annual reports (based on M&E system)<br>• WUA audit reports (based on M&E systems of WRD/KNNL)<br>• WRD annual reports<br>• WRD/KNNL annual reports and WUA audit reports<br>• WRD/KNNL annual reports | **Assumption**<br>• WUA members are willing to follow the rules adopt modern agriculture practices |
| 3. Urban WSS infrastructure expanded and management systems strengthened | By 2020<br>• Average hours of supply extended from XX hours to XX hours especially poor women-headed households<br>• NRW ratio reduced from XX% to XX%<br>• Amount of treated wastewater increased from XXMLD to XXMLD, with X% effluent reused/ recycled | • ULB M&E systems and their statistics<br>• Same as above<br>• Same as above | **Assumption**<br>• Bulk water supplied sufficiently |
| 4. Innovations developed to improve water balance with new technologies and institutional modalities | By 2020<br>• Number of ULBs with a private operator for urban WSS<br>• Amount of recycled wastewater increased from XXMLD to XXMLD<br>• Innovative water efficient irrigation for XX ha (micro irrigation, water saving cropping in groundwater irrigation areas, etc.) | • ULB M&E systems and statistics<br>• Same as above<br>• WRD/KNNL M&E systems, annual reports and statistics | **Assumptions**<br>• Acceptability of private operator by local community<br>• Sufficient demand for recycled water |
| 5. Sound multidisciplinary Program management system | By 2015<br>• PCU set up and effectively guide sector PIU activities<br>• Sector PIUs are established and attain annual and Program implementation targets | • PCU annual and quarterlyprogres reports<br>• PIU annual and quarterly progress reports | **Assumption**<br>• Inter-sectoral coordination is well managed through strong leadership |

| Design Summary | Performance Targets/Indicators [a] | Data Sources/Reporting Mechanisms | Assumptions and Risks |
|---|---|---|---|
| **Activities with Milestones**<br>PPTA and Project Processing<br>• Preparation for PPTA initiation, including consultant engagement, staff appointment, collection of information (by Dec. 2011)<br>• PPTA implementation, including inception report and workshop, output preparation (MFF sector roadmap and investment plan, feasibility and safeguards studies of tranche-1 schemes (February–July 2012), and preparation of Program implementation plan, DPRs, detailed design, and tender documents (July–October 2012)<br>• Project processing, including loan fact-finding mission (August 2012), Management review meeting (September 2012), Initiation of advance actions and activities for retroactive financing (September 2012), Loan negotiations upon achievement of readiness milestones (November 2012), Board submission and consideration (January 2013)<br><br>Output 1: Institutions and systems established for holistic water resources management at state and basin levels<br>• Assessment of appropriate institutional functions, setup, arrangements, and capacity development requirements (January–June 2012)<br>• Strengthening of WMA (2015)<br>• Establishment of water regulatory functions and institutions (2015) and RBOs (2014)<br>• Strengthening of data base and DDS in a pilot sub-basin (2015) under Tranche-1<br><br>Output 2: Irrigation infrastructure modernized and management systems and institutions strengthened<br>• Feasibility and safeguards studies, and institutional assessments to define implementation arrangements (January–June 2012)<br>• Strengthening of WUAs and service delivery agencies (2013–2016 for Tranche-1)<br>• Modernization of irrigation infrastructure and establishment of sound O&M systems (2013–2016 for Tranche-1)<br>• Enhancement of irrigated agriculture productivity, water use efficiency, and distribution equitability (2013–16 for Tranche-1)<br><br>Output 3: Urban WSS infrastructure expanded and management systems strengthened<br>• Feasibility and safeguards studies, and institutional assessments to define implementation arrangements (January–June 2012)<br>• Extension of urban WSS systems (2013–16 for Tranche-1)<br>• Strengthening of ULBs and providers (2013–16 for Tranche-1)<br>• Enhancement of water use efficiency and O&M sustainability (2013-16 for Tranche-1)<br><br>Output 4: Innovations developed to improve water balance with new technologies and institutional modalities<br>• Identification and design of innovations in 2012 (during PPTA)<br>• Pilot implementation of identified innovations in 2013-16 (for Tranche-1)<br><br>Output 5: Sound multidisciplinary Program management system<br>• Assessment of implementation setup and arrangements (January–June 2012)<br>• Establishment of PCU, PIUs, and subproject offices (Sept. 2012)<br>• Initiation of advance actions by Sept. 2012, and engaging and mobilizing consultants and NGOs before loan signing in 2013 | | | **Inputs**<br>**PPTA**<br>• ADB: $1.1 million<br>• CCF: $0.1 million<br>• UEIF: $0.3 million<br>• Government: $0.375 million<br>**Loan**<br>• ADB: $300 million<br>• Government: $130 million<br>• Cofinanciers: T.B.D.<br>• Beneficiaries: T.B.D. |

ADB = Asian Development Bank; CCF = Climate Change Fund, CWC = Central Water Commission; DPR = detailed project reports; UEIF = Urban Environmental Infrastructure Fund; MFF = multi-tranche financing facility; MLD = million liter per day; M&E = monitoring and evaluation, NRW = non revenue water; O&M = operation and maintenance, PCU = program coordination unit; PIU = program implementation unit; PPTA = project preparatory technical assistance, RBO = river basin organization; TA = technical assistance, T.B.D. = to be determined; ULB = urban local body; WMA = Water Management Agency, WRA = Water Regulatory Agency; WRD/KNNL = Water Resources Department/ Karnataka Neeravari Nigam, Ltd. (State irrigation company); WSS = water supply and sanitation; WUA = water user association

[a] Baseline data to be supplied during the project preparatory technical assistance.

## PROJECT PREPARATORY TECHNICAL ASSISTANCE (PPTA)

### A. Justification

1. The capacity development technical assistance (CDTA) for Integrated Water Resources Management (IWRM) and Sustainable Water Service Delivery in Karnataka has defined (i) a roadmap to initiate holistic water resources management and its institutional systems at state and basin levels, and (ii) strategy for institutional development and investments in irrigation and urban water supply and sanitation (UWSS). They have provided a basis of meeting increasing water demands with enhanced efficiency and productivity thereby maintaining appropriate basin water balance and river environment. The State is willing to implement the CDTA outputs including the roadmap and the investment strategy. As to the roadmap for holistic water resources management, the State is now setting up an IWRM Center (IWRMC) to be anchored to the Water Resources Department (WRD) to define institutional setup and arrangements for improved water management and regulatory functions, including the mechanisms for monitoring and adapting to the impact of the climate change, in close consultations with the stakeholders.

2. Along with the process, the specific investments and institutional reforms in irrigation and urban WSS need to be defined based on the strategy developed under the CDTA. Key institutional agendas include (i) institutional setup and capacities of the relevant sector agencies, local governments including urban local bodies (ULBs), and private operators for improved service quality and operational efficiency; (ii) institutional including legal framework to support participatory irrigation management (PIM) and sustainable UWSS; (iii) measures to ensure infrastructure operation and maintenance (O&M) sustainability; and (iv) medium-term sector investment plans. These need to be undertaken with stakeholder consultation and culminated into a multitranche financing facility (MFF) sector roadmap. As to the specific investment, an MFF tranche-1 package needs to be prepared with feasibility and safeguards studies with implementation readiness. A PPTA is required to meet these requirements.

### B. Major Outputs and Activities

3. The PPTA (the TA) will prepare an MFF for the Karnataka Integrated and Sustainable Water Resources Management Investment Program (the Program) that can lead to the sector impacts and outcome (in para. 8 of the main text) while meeting all processing requirements of the borrower and ADB.[1] A consultative approach will be taken with workshops to reflect stakeholder views in the Program design. The TA will prepare the following outputs. Their summary and activities are shown in Table A4.1.

(i) **MFF Sector Roadmap.** The TA will prepare (a) institutional roadmap for holistic water resources management, irrigation, and UWSS, with reforms to provide an enabling environment, and improved operational framework and capacities; and (b) sector investment plans to attain the medium-term set sector objectives.

(ii) **Feasibility Studies of Tranche-1 Schemes.** The TA will conduct feasibility studies of the selected subprojects for MFF tranche-1, covering existing irrigation and UWSS systems, and new wastewater treatment plants.[2]

(iii) **Facility Administration Manual (FAM).** On the basis of the above, FAM will be prepared following the standard ADB format, along with relevant manuals and capacity development plan.

(iv) **Detailed Project Report (DPR) and Initial Procurement Packages.** The TA will advise on these processes following up on the MFF loan fact-finding.

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[1] Given that the component for holistic water resources management has been assisted under the CDTA, the PPTA will primarily focus irrigation and UWSS while synthesizing the CDTA outputs on the design of the said component.

[2] Capacities of local contracting industries will also be assessed in this context.

**Table A4.1. Summary of Key Outputs and Activities**

| Major outputs | ECD | Major Activities | ECD |
|---|---|---|---|
| MFF Sector roadmap | July 2012 | (i) Institutional assessment of water resources sector<br>(ii) Investment programming (strategy and plan)<br>(iii) Operation and maintenance sustainability study<br>(iv) Draft final reporting | June 2012<br>June 2012<br>June 2012<br>July 2012 |
| Subproject feasibility study reports | June 2012 | (i) Field engineering and baseline surveys<br>(ii) Basic engineering and program designs<br>(iii) Safeguards assessments<br>(iv) Cost estimates, and feasibility assessments<br>(v) Draft final reporting | Feb 2012<br>Apr 2012<br>May 2012<br>May 2012<br>June 2012 |
| Facility administration memorandum | July 2012 | (i) Facility administration manual preparation<br>(ii) Financial management and other manuals | July 2012<br>July 2012 |
| DPRs and initial procurement packages | Oct 2012 | (i) Advice on processing detailed project reports<br>(ii) Advice on initial tender documents | Oct 2012<br>Oct 2012 |

DPR = detailed project report, ECD = expected completion date, MFF = multi-tranche financing facility
Source: Asian Development Bank. 2011.

## C. Cost Estimates and Proposed Financing Arrangements

4. ADB will finance $1,200,000 equivalent on a grant basis, including $1,100,000 through ADB's Technical Assistance Special Fund (TASF)–Other Sources, and $100,000 from Climate Change Fund.[3] The Government will contribute counterpart facilities, staff, and data accounting for 20% of the total cost of the TA, and has been advised that approval of the TA does not commit ADB to financing any ensuing project.

**Table A4.2. Cost Estimates and Financing Plan**

| Item | Total Cost ($ '000) |
|---|---|
| **Asian Development Bank*[a] and Climate Change Fund Financing** | |
| 1. Consultants | |
| a. Remuneration and Per Diem | |
| i. International Consultants | 463 |
| ii. National Consultants | 275 |
| b. International and Local Travel | 75 |
| i. International Travel | 46 |
| ii. Local Travel | 29 |
| c. Reports and Communications | 10 |
| 2. Equipment *[b] | 13 |
| 3. Training, Seminars and Workshops | 10 |
| 4. Surveys and Consultations | 170 |
| 5. Miscellaneous Administration and Support Costs | 69 |
| 6. Contingencies | 115 |
| **Total** | **1,200** |

*[a] Financed by Asian Development Bank's (ADB's) Technical Assistance Special Fund–Other sources, to be financed through cost sharing basis with Climate Change Fund, which is established by ADB.
*[b] Computers and ancillaries, to be handed over to the Government after completion.
Source: ADB estimates. 2011.

## D. Consulting Services

5. The TA will be primarily implemented over a period of 6 months from the fielding of the consultants, which is anticipated in January 2012, to draft the first three outputs. After this, it is extended for further 6 months to facilitate the finalization of the said outputs with ADB's loan

[3] Supplementary activities for PPTA will be implemented as a subproject under Regional CDTA on Support to Urban Infrastructure Development Financing to be financed by the Urban Environmental Infrastructure Fund under the Urban Financing Partnership Facility ($300,000).

fact-finding mission, and to advise on the preparation of the DPRs and initial procurement packages by the state government of Karnataka (the State). Consulting services will be divided into two groups: (i) IWRM and irrigation, and (ii) urban WSS, which will be working together closely under the guidance of the concerned State departments and the TA steering committee. For IWRM and irrigation group, ADB will engage an international firm associated with national consultants following quality and cost based selection (QCBS) at a ratio of 80:20 based on simplified technical proposal. All consultants under urban WSS group will be engaged individually. The summary of the consultant requirements is shown in Table A4.3 below, which is followed by outline of the terms of reference (TOR) of the consultants.[4]

**Table A4.3. Summary of Consulting Services Requirement**

| International | | National | |
|---|---|---|---|
| **Position** | **Person-months** | **Position** | **Person-months** |
| **IWRM and Irrigation Group** | | | |
| Water resources management specialist | 4 | Water resources institutional specialist | 4 |
| Irrigation design-O&M engineer | 2 | Irrigation design-O&M engineer | 4 |
| Agriculture specialist | 1.5 | Agriculture and market specialist | 4 |
| WUA specialist | 2 | Project economist/ financial analyst | 4 |
| Agriculture and project economist | 2.5 | Poverty and Social Specialist (Gender) | 4 |
| | | Procurement Specialist | 1 |
| **UWSS Group** | | | |
| WSS specialist | 4 | Water supply specialist | 8 |
| Wastewater treatment plant specialist* | 4 | Wastewater specialist* | 8 |
| PPP expert* | 3 | WSS economist/ financial analyst | 4 |
| Institutional Specialist* | 1 | Poverty and Social Specialist | 3 |
| **Both Groups** | | | |
| | | Environment specialists | 7.5 |
| | | Resettlement specialists | 6.5 |
| **TOTAL** | **24** | | **58** |

IWRM=integrated water resources management, O&M=operation and maintenance, PPP=public-private partnership, WSS=water supply and sanitation, WUA = water user association

* The wastewater treatment plant specialist, PPP expert and institutional specialist will be engaged and funded by UEIF under Regional CDTA on Support to Urban Infrastructure Development Financing.

Source: ADB estimates. 2011.

6. **IWRM and Irrigation Group.** International water resources management specialist will work as team leader (TL), and responsible for delivering all the outputs. Primary responsibility will be to prepare sector roadmap including institutional action plan and MFF investment plan, and guide feasibility studies and implementation planning. TL will also assess the implication of climate change and adaptation mechanisms with other experts. National water resources institutional specialist under TL advice will undertake (i) institutional studies for state irrigation agencies to improve their setup and capacities to improve service delivery with PIM, including the potential of pilot third party operator to manage canal O&M; (ii) compilation of MFF sector investment plan with project economists, (iii) studies on appropriate institutional including legal framework and capacity development of WUAs with international WUA specialist who will lead the studies in contact with local institutions such as Water and Land Management Institute.

7. Irrigation design and O&M engineers will be responsible for (i) survey, basic design, and cost estimates of irrigation modernization of a few selected schemes for MFF project-1 including the assessment of innovations; and (ii) O&M plans for the concerned schemes. WUA specialist and water resources institutional specialist will assess and recommend the arrangements to strengthen irrigation service delivery including WUAs, while agriculture and marketing specialist will explore suitable cropping and marketing opportunities and define appropriate agriculture programs for the subprojects. Project economists and sociologist will arrange a baseline survey

[4] More detailed terms of reference is available as Supplementary Appendix B.

for the subprojects, and undertake economic, financial, and social impact assessments of the investments, and define appropriate risk mitigation measures. The former will also arrange financial management (FM) assessment of the sector agencies and prepare FM manual. Procurement specialist will assess the capacities and systems of the executing agency's (EA's) procurement and contract management, and of the local contractor industries, while preparing procurement plan with irrigation design and O&M engineers.

8. **Urban WSS Group.** Water supply specialist and wastewater specialists will (i) review investment opportunities and establish selection criteria for subprojects to be funded under the MFF, (ii) prioritize qualified subprojects and identify one pilot subproject for water sector and another one for wastewater sector for MFF project-1, (iii) conduct their feasibility studies with basic design and cost estimate, (iv) advise the EA to prepare the DPRs based on the feasibility study. PPP expert and institutional specialist will (i) carry out economic and financial assessment of the chosen pilot subprojects in accordance with ADB's guidelines, including estimates of economic internal rate of return, financial internal rate of return, (ii) carry out financial projection and financial management assessment of the concerned ULBs, and (iii) examine and propose appropriate PPP structure for the pilot subprojects.

9. In both groups, environment specialists and social safeguard specialists (2 positions in each group) will carry out environmental and social impact assessment of the chosen pilot subprojects for following ADB's Safeguard Policy Statement, and prepare (i) relevant framework documents for safeguard agendas as appropriate; and (ii) subproject safeguards assessments that may include initial environmental examination or environmental impact assessment, resettlement plan, and indigenous peoples development plan or specific actions, as required. Environment specialists will closely work with TL for incorporation of climate change impacts and adaptation measures across the Program design in coordination with other specialists.

## E. Implementation Arrangements

10. The TA will be implemented over 12 months starting January 2012. WRD will be the EA looking after overall coordination for the multi sector Program formulation, IWRM (through IWRMC) and irrigation modernization (through Karnataka Neeravari Nigam Ltd. [KNNL]), while Karnataka Urban Infrastructure Development and Finance Corporation (KUIDFC) will be the EA to prepare the outputs of the UWSS component. WRD and KUIDFC will provide (i) counterpart staff with adequate logistic support, (ii) office space and utilities, and (iii) resources to prepare DPRs and tender documents including detailed design. A TA steering committee chaired by Chief Secretary formed under the CDTA with representatives from the concerned departments will guide the TA implementation. All disbursements under the TA will be made in accordance with ADB's *Technical Assistance Handbook* (May 2010, as amended). Purchase of equipment is in accordance with ADB's *Procurement Guidelines* (2010, as amended). The proposed TA processing and implementation schedule is in Table A4.4 below.

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

| Major Milestones | Expected Completion Date |
|---|---|
| Reconnaissance/ PPTA fact-finding mission | 30 March 2011 |
| ADB concept paper clearance (including PPTA) | 5 December 2011 |
| PPTA Implementation | |
| Consultant mobilization | II January 2012 |
| Inception review | I February 2012 |
| Midterm review | I May 2012 |
| Final tripartite review/loan fact-finding | III August 2012 |
| Final report on project design, and processing outputs | I September 2012 |

ADB = Asian Development Bank; PPTA = project preparatory technical assistance
Source: ADB. 2011.

# INITIAL POVERTY AND SOCIAL ANALYSIS

| | | | |
|---|---|---|---|
| Country: | India | Project Title: | **KARNATAKA INTEGRATED AND SUSTAINABLE WATER RESOURCE MANAGEMENT INVESTMENT PROGRAM** |
| Lending/Financing Modality: | Multi-tranche financing facility | Department/ Division: | SARD/ SAER and SARD/ SAUW |

## I. POVERTY ISSUES

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

*1. Based on the country poverty assessment, the country partnership strategy and the sector analysis, describe how the project would directly or indirectly contribute to poverty reduction and how it is linked to the poverty reduction strategy of the partner country.*

India's 11th Five-year Plan (FYP) (2008–12) has focused on poverty reduction and social development through faster and more inclusive growth. It aims at creating jobs, providing essential service to the poor, reinvigorating the rural economy, increasing manufacturing competitiveness, developing human resources, protecting the environment, and bridging the divides between regions, sectors, and genders. Key binding constraints targeted to be addressed include (i) infrastructure bottleneck including long-term fund; (ii) systematic weaknesses within agriculture; (iii) interstate disparities in social and economic indicators. (iv) education and health indicators that continued to be poor, and (v) growth-environment trade-off.

Karnataka is one of the high growth states in India, but it fares worse than other states in terms of poverty reduction, with over 30% of the rural population are poor (living on Rs12 per capita per day) and its rural urban disparity widening. In this context, addressing the bottlenecks in water is seen as one of the major challenges, given that it is one of the most water-stressed states in India. The State's surface water runoff has already been substantially utilized, while groundwater is also over-exploited in 40% of districts. Yet its annual water utilization is anticipated to increase by 40% between 2000 and 2025. Meeting the growing needs is a major challenge. Irrigation, while accounting for 94% of water use in major river basins, can provide access only to some 30% of net sown area, and suffer from low efficiency (40% of abstraction utilized), unequal distribution, and system deterioration, i.e., created potentials are substantially underutilized to enhance rural livelihoods. While access to safe drinking water has reached 84% of the population, unmet demand is substantial: only 25% of urban local bodies and rural villages can supply the set per capita requirements. Sanitation coverage is only at 38%. Most systems have also low efficiency in distribution and high unaccounted for water reaching 30-80%. The State is also suffering from rapidly rising industrial water demand and untreated effluent discharge, and degrading watersheds causing rapid runoff and siltation of reservoirs. In general poor people are disproportionately affected with less access to water and where available of a much lower quality. Within this context, the State through Karnataka Vision for Development and 11th FYP has placed high priority to address the water sector challenges through physical investments to expand access and improve efficiency of irrigation and urban water supply and sanitation (UWSS), while strengthening the policy and institutional framework to initiate integrated water resources management (IWRM) on the basis of river basins, and pursue improved service delivery as a means to reduce poverty and achieve water security for all.

ADB's country assistance strategy is closely aligned with the Government of India's 11th FYP, and has placed high priority in supporting inclusive and environmentally sustainable growth through infrastructure development, within which expanding UWSS has been focused on a long-term basis in light of its high implications for poverty reduction and linkage to millennium development goal (MDG) for safe drinking water (MDG 7). The strategy has also envisaged enhanced ADB roles in rural infrastructure including irrigated agriculture, and water resources management to support the Government's priority to pursue rural poverty reduction. As such, the support for the Program – aimed to enhance water security for the basin population with increased access to irrigation, UWSS, and better water management systems to improve overall basin water balance and environment – is in line with the strategy, as well as ADB's Water for All policy and a draft water operational framework 2011-20. It will also contribute to adaptation to the possible impact of climate change, which may increase the frequency and magnitude of water stress.

### B. Targeting Classification

*1. Select the targeting classification of the project:*

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

*2. Explain the basis for the targeting classification:*

Not applicable. Available information indicates that the rural poverty level of the project area is lower than national average, although areas of high poverty incidence is also observed in particular those deprived of irrigation due to poor infrastructure performance. Urban poverty level is also lower. However, there will be some contributions to MDG1 (extreme poverty and hunger) and MDG7 (access to safe drinking water). The specific relevant indicators at baseline and post project levels will be assessed during the project preparatory technical assistance (PPTA), including the percentage of poor in the beneficiary population, level of increased access to water, and impacts on incomes derived from increased access.

**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 to the project preparatory TA and due diligence?*

2 person-months of international water user association specialist (sociologist), 3 person-months of national sociologist, and 5 person-months of resettlement specialist (2 positions for irrigation and UWSS) are envisaged, together with consultative socio-economic surveys of the selected subprojects to be entrusted to local NGOs.

*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 Program will support modernization of existing irrigation infrastructure and rehabilitation and expansion of UWSS systems along with their management systems and institutions, and beneficiary capacities. It will have beneficial socio-economic impacts. To support inclusive growth and sustainable system management, the Program will emphasize on beneficiary participation and awareness, with due attention to the representation of diverse interests and vulnerability of the weaker sections of the society (e.g., farmers in tail reaches, scheduled castes and tribes, women, and other vulnerable groups) in the decision making process of water management. To support this end, possibilities for improved WUA regulations for better representation of vulnerable groups will be explored. WUA capacity building may promote their due representation, with a possible focus on facilitating the technical capacity development and organizational development of high-value water saving cropping for small holders and share croppers having disadvantaged positions. Pro-poor practices such as cross subsidization of water fees between the poor and the non-poor (including industrial users), etc. would also be explored.

**II. SOCIAL DEVELOPMENT ISSUES**

**A. Initial Social Analysis**

*Based on existing information:*

*1. Who are the potential primary beneficiaries of the project? How do the poor and the socially excluded benefit from the project?*

The primary beneficiaries of the project are the communities within the existing poorly performing irrigation schemes and population in the selected urban areas located in the upper Tungabhadra river basin for tranche-1, and those who are located in other water-stressed basins in the subsequent tranches. In general, main beneficiaries are those who have limited access to irrigation (e.g., farmers in tail end reaches of the canals) and UWSS systems due to low efficiency in water distribution, where poverty levels are higher than the areas having more reliable access.

In irrigation systems, farmers including women and marginalized communities will be able to strengthen social capital to enrich their choices towards strengthening food security, enhancing their incomes and their livelihoods, and maintaining environment such as soil quality. Provision of safe clean drinking water and effective and functional sanitation facilities is a prerequisite to improve the quality of life and hence reduce poverty, through better health, saving time for carrying water and checking children particularly girls from dropping out of schools and contribute to their education. Improved water resources management through IWRM will also benefit the basin population at large through improved water availability and quality, and better riverine environmental conditions.

*2. What are the potential needs of beneficiaries in relation to the proposed project?*

The beneficiaries are communities living in the river basin area, both rural and urban. Irrigation modernization and UWSS expansion/ rehabilitation will be provided to areas where people suffer from lack of access to water resources. For the rural poor in Karnataka, access to and control of irrigation water are fundamental importance as water is the foundation for agriculture and livelihoods activities. Likewise, for urban population, access to safe drinking water remains a primary need to maintain health and livelihoods.

Nevertheless, the beneficiaries may usually have other development needs to further enhance incomes through better access to modern inputs and output markets, as well as better services such as health and education. The PPTA will assess appropriate options and ways that can meet the needs of the beneficiaries particularly vulnerable groups.

*3. What are the potential constraints in accessing the proposed benefits and services, and how will the project address them?*

Improved irrigation and UWSS infrastructure will enhance access to the population presently having limited or no access who are proportionately poorer and socially more disadvantaged. However, sustaining the improved access would require sustainable institutions and service delivery mechanisms to adequately operate and maintain the facilities in an accountable manner to the needs of the beneficiaries. In general, the requisite accountable and sustainable service delivery mechanism is often lacking, and poses a challenge to the concerned population.

Accordingly, the Program will include strengthening of the institutional mechanisms of sustainable, equitable, and efficient service delivery, including institutional reforms and capacity development of the service delivery agencies to become service oriented, and reflection of appropriate cost recovery mechanisms to sustain operation and maintenance (O&M). The TA will also pursue participation of stakeholder representatives in the decision making process of the service delivery agencies as well as basin water managers and operators. Capacities and awareness of the beneficiaries, including farmer WUAs of irrigation schemes and user communities of UWSS systems will also be strengthened, to become equal partners to the service providers and water managers for the orderly provision (by providers) and use (by user organizations) of water following the mutually agreed rules and standards with due disciplines. Attention is also paid to the due representation of the poor and vulnerable groups in the decision making process of the user organizations.

The TA will also identify and assess any social, political, and other constraints that may be constraining the participation of the socially weaker sections of the population, to explore practical options for the inclusive development during the process of improving water resources management.

**B. Consultation and Participation**

*1. Indicate the potential initial stakeholders.*

The project stakeholders are: (i) direct beneficiaries, including women and men of rural and urban communities, including disadvantaged groups and castes, who will be involved in the planning of and benefit from the basic services and other accompanying measures; (ii) affected persons by land acquisition and resettlement, and affected indigenous peoples, if any; (iii) the district and state authorities including Water Resources Department and affiliated state irrigation companies, urban local bodies (ULBs), departments concerned on agriculture, fishery, industry, forestry and environment, and UWSS board and corporations; (iv) elected representatives at local government, state and national levels, and (v) civil society organizations including NGOs active in water and environment sectors.

*2. What type of consultation and participation (C&P) is required during the project preparatory TA or project processing (e.g., workshops, community mobilization, involvement of nongovernment organizations and community-based organizations, etc.)?*

The project will build on the intensive consultation and community participation undertaken during the PPTA, with the support from consultants and NGOs. These include both community participation and mobilization for sub-project planning, implementation and O&M. Intensive community consultations will also be carried over to the project implementation stage in which programs for strengthening WUAs and UWSS user awareness will be included as important activities.

*3. What level of participation is envisaged for project design?*

☐ Information sharing ☒ Consultation ☒ Collaborative decision making ☐ Empowerment

During project implementation, collaborative decision making and empowerment will be envisaged.

4. Will a C&P plan be prepared? ☒ Yes ☐ No Please explain.

**C. Gender and Development**

*1. What are the key gender issues in the sector and subsector that are likely to be relevant to this project or program?*

Women in Karnataka have limited and less access (compared to men) to land and other productive assets and financial resources, and lack of autonomy within the households. As such, they bear a proportionately higher burden of poverty, in terms of more limited access to education, health services, and skills training as well as labor markets. Besides household chores that they bear substantial responsibilities within the households, they are important work force in the agriculture sector. They also travel long distance in search of water.

In local communities and user organizations, their representation is still limited. While the local self-governance system provide for 33% reservation for women to all elected positions that are being followed, their effective participation in decision making process still remains a challenge. The PPTA will build on the consultations held in this regard during the preceding TA (referred in para. 6 of the main text) and explore practical ways that can promote effective steps towards higher participation and empowerment of women and incorporation of their interests and views in planning, implementation, and O&M of the facilities to be provided, as well as their participation in user organizations, service providers, basin water managers, local NGOs, and other stakeholders.

2. Does the proposed project or 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? ☒ Yes ☐ No

A gender analysis will be undertaken by PPTA consultants, and a gender action plan prepared, with collection of sex-disaggregated information and data that will be effectively used in its preparation as well as project design.

3. Could the proposed project have an adverse impact on women and/or girls or widen gender inequality?[10]

☐ Yes ☒ No Please explain.

| III. SOCIAL SAFEGUARD ISSUES AND OTHER SOCIAL RISKS | | | |
|---|---|---|---|
| **Issue** | **Nature of Social Issue** | **Significant/Limited/ No Impact/Not Known** | **Plan or Other Action Required** |
| **Involuntary Resettlement** | The Program will include modernization of existing irrigation schemes and expansion of UWSS systems. Due diligence review of past and present IR and IP issues will be undertaken. | Given the presence of existing schemes and experience of similar UWSS, involuntary resettlement impacts may be entailed but not deemed to be significant, which will be assessed under the PPTA. | ☐ Full Plan<br>☒ Short Plan<br>☒ Resettlement Framework<br>☐ No Action<br>☐ Uncertain |
| **Indigenous Peoples** | Infrastructure works as referred above are not likely to entail negative impacts on disadvantaged ethnic minorities and castes. | Given the nature of works for irrigation (modernization of existing infrastructure) and urban location of UWSS, no impacts on traditional ways of life or ancestral lands are expected to occur. This will be assessed and confirmed during the PPTA. | ☐ Plan<br>☐ Other Action<br>☒ Indigenous Peoples Framework<br>☒ No Action<br>☐ Uncertain |
| **Labor**<br>☒ Employment Opportunities<br>☐ Labor Retrenchment<br>☐ Core Labor Standards | No labor impacts are anticipated other than labor generation for civil works and O&M. | No impact anticipated. Core labor standards will be included in contract clauses. | ☐ Plan<br>☐ Other Action[18]<br>☒ No Action<br>☐ Uncertain |
| **Affordability** | Water tariff is anticipated to be applied but its impacts are anticipated to be exceeded by increased benefits in terms of farm incomes and reduced cost of alternative water supply. | Little impact anticipated. To be further assessed during the PPTA. | ☐ Action<br>☐ No Action<br>☒ Uncertain |
| **Other Risks and/or Vulnerabilities**<br>☐ HIV/AIDS<br>☐ Human Trafficking<br>☐ Others (conflict, political instability, etc.), please specify | No significant risks are anticipated in these aspects. | Little or no impact anticipated. To be further assessed during the PPTA. | ☐ Plan<br>☐ Other Action<br>☐ No Action<br>☒ Uncertain |

| IV. PROJECT PREPARATORY TECHNICAL ASSISTANCE/DUE DILIGENCE RESOURCE REQUIREMENT |
|---|
| 1. *Do the terms of reference for the project preparatory TA (or other due diligence) include poverty, social, and gender analysis and the relevant specialist(s)?* ☒ Yes ☐ No *If no, please explain why.* |
| 2. *Are resources (consultants, survey budget, and workshop) allocated for conducting poverty, social, and/or gender analysis, and C&P during the project preparatory TA or due diligence?* ☒ Yes ☐ No *If no, please explain why.* |

Supplementary Appendixes (available on request)

A. Preliminary Program Scope
B. Terms of Reference of Consulting Services