

**FRAMEWORK FINANCING AGREEMENT  
(INDIA: KARNATAKA INTEGRATED AND SUSTAINABLE WATER RESOURCES  
MANAGEMENT INVESTMENT PROGRAM)**

**Parties** This Framework Financing Agreement (“FFA”) dated 28 July 2014 is between India, acting by its President (“INDIA”), and Asian Development Bank (“ADB”).

**MFF Investment Program** INDIA is committed to and will cause the State of Karnataka (“the State”) to implement the Karnataka Integrated and Sustainable Water Management Investment Program (“Investment Program”), which is an integral part of Karnataka’s Integrated Water Resources Management Road Map (“Road Map”). Both the Road Map and the Investment Program are described in Schedule 1 hereto.

The total cost of the Investment Program over the period 2014 to 2021 is expected to be \$225 million equivalent.

**Multitranche Financing Facility** The Multitranche Financing Facility (the Facility) is intended to finance projects and subprojects, under the Investment Program, provided that such projects and subprojects comply with the criteria set out in Schedule 4 hereto and that understandings set out in this FFA are complied with.

These may include:

- (i) Institutional strengthening for integrated water resources management (IWRM) including river basin planning, establishing water resources information systems, state IWRM strategy and other policy enhancements, capacity building of water professionals in IWRM, land and water management planning and preparation of river basin inventories;
- (ii) Irrigation systems modernization with improved distribution network and control structures;
- (iii) Installation and operation of telemetry systems for irrigation subprojects and river hydrometric systems within the basin;
- (iv) Capacity building of AC-IWRM, Karnataka Neeravari Nigam Limited (KNNL) and command area development authority (CADA) in improved irrigation systems operation, maintenance and management;
- (v) Water user cooperatives societies (WUCS) capacity building for participatory irrigation management;
- (vi) Command area development activities including provision of field channels, high efficiency irrigation systems and improved agricultural practices;
- (vii) Capacity building for women in improved water governance; and

- (viii) Institutional capacity building for financial management, procurement and project management

This FFA does not constitute a legal obligation on the part of ADB to commit any financing. At its sole discretion, exercised reasonably, ADB has the right to deny any financing request made by INDIA, cancel the uncommitted portion of the Facility, and withdraw INDIA's right to request any financing tranche under the Facility. Financing tranches may be made available by ADB provided matters continue to be in accordance with the general understandings and expectations on which the Facility is based and which are laid out in this FFA.

This FFA does not constitute a legal obligation on the part of INDIA to request any financing. INDIA has the right not to request any financing under the Facility. INDIA also has the right at any time to cancel any uncommitted portion of the Facility.

INDIA and ADB may exercise their respective rights to cancel the Facility or any uncommitted portion thereof, and ADB may exercise its right to refuse a financing request, by giving written notice to such effect to the other parties. The written notice will provide an explanation for the cancellation or refusal and, in the case of a cancellation, specify the date on which the cancellation takes effect.

### ***Financing Plan***

The financing plan for the Investment Program is summarized below.

<b>Source</b>	<b>Overall Program</b>	
	<b>Amount</b> (\$ million)	<b>Share of Total</b> (%)
Asian Development Bank	150	67
Government	70	31
Beneficiaries	5	2
<b>Total</b>	<b>225</b>	<b>100</b>

### **Financing Terms**

ADB will provide loans to finance projects and subprojects under the Investment Program, as and when the latter are ready for financing, provided, INDIA is in compliance with the understandings hereunder, and the projects and subprojects are in line with those same understandings. Each loan will constitute a tranche.

Each tranche may be financed under terms different from the financing terms of previous or subsequent tranches. The choice of financing terms will depend on the project, capital market

conditions, and ADB's financing policies, all prevailing on the date of signing the legal agreement for such tranche.

Tranches may be provided in sequence or simultaneously, and some may overlap in time with each other.

Commitment charges are not payable on the Facility. They are payable only on financing actually committed by ADB as a loan. ADB rules on commitment charges, which are in effect when the legal agreements are signed for a tranche, will apply with respect to such tranche.

### ***Amount***

The maximum financing amount available under the Facility is one hundred fifty million dollars (\$150,000,000). It will be provided in individual tranches from ADB's Ordinary Capital Resources.

### ***Availability Period***

The last date on which any disbursement under any tranche may be made will be 30 September 2021. The last financing tranche is expected to be executed no later than 30 August 2015.

### ***Terms and Conditions***

INDIA will cause the proceeds of each tranche to be applied to the financing of expenditures of the Investment Program, in accordance with conditions set forth in this FFA and the legal agreements for each tranche.

### **Execution**

The Executing Agency will be the State acting through the Karnataka Neeravari Nigam Limited ("KNNL"), or any successor thereto acceptable to ADB. The Executing Agency will implement the Investment Program in accordance with the principles set forth in Schedule 1 to this Agreement, and as supplemented in the legal agreements for each tranche.

### **Periodic Financing Requests**

INDIA may request, and ADB may agree, to provide loans under the Facility to finance the Investment Program and its related projects and subprojects upon the submission of a Periodic Financing Request (PFR). Each PFR should be submitted by INDIA. INDIA will make available to the State; and through the State to KNNL and the implementing agencies, the proceeds of the tranche in accordance with the related PFR, and the legal agreements for the tranche.

Each individual tranche will be for an amount of no less than thirty million dollars (\$30,000,000), or its equivalent. ADB will review the PFR(s) and, if found satisfactory, prepare the related legal agreements.

The subprojects for which financing is requested under the PFR will be subject to the selection criteria set out in Schedule 4 hereto, satisfactory due diligence, and preparation of relevant safeguard and fiduciary frameworks and other documents. The Facility will be implemented in accordance with the general framework set out in Schedule 3 to this FFA, and the Facility Administration Manual ("FAM") agreed between INDIA and ADB.

Until notice is otherwise given by INDIA, the Secretary, Additional Secretary, Joint Secretary, any Director or any Deputy Secretary in the Department of Economic Affairs, Ministry of Finance, will be INDIA's authorized representative for purposes of executing PFRs.

**General  
Implementation  
Framework  
Procedures**

The Facility will be implemented in accordance with the general framework set out in Schedule 3 hereto.

Tranches to be provided under the Facility will be subject to following procedures and undertakings:

- (a) INDIA will have notified ADB of a forthcoming PFR in advance of the submission of the PFR.
- (b) INDIA will have submitted a PFR in the format agreed with ADB.
- (c) ADB may, in its sole discretion, decline to authorize the negotiation and execution of any legal agreement for a tranche.
- (d) If ADB confirms acceptance of the PFR, the legal agreements will be negotiated and executed by the parties.

**PFR information**

The PFR will substantially be in the form attached hereto, and will contain the following details:

- (i) Loan and cofinancing (if any) amount;
- (ii) Description of subprojects to be financed;
- (iii) Cost estimates and financing plan;
- (iv) Implementation arrangements specific to the subprojects;
- (v) Confirmation of the continuing validity of and adherence to the understanding in this Agreement;
- (vi) Confirmation of compliance with the provisions under previous Loan Agreement(s) and Project Agreement(s), as appropriate; and
- (vii) Other information as may be required under the Facility Administration Manual, or reasonably requested by ADB.

**Safeguards**

Attached as Schedule 5 are references to the Safeguard Frameworks that will be complied with during the implementation of the Facility.

ADB's Safeguard Policies in effect as of the date of signing of legal agreements for a tranche will be applied with respect to the subprojects financed under such financing tranche.

**Procurement** All goods and services to be financed under the Facility will be procured in accordance with ADB's *Procurement Guidelines* (2013, as amended from time to time).

**Consulting Services** All consulting services to be financed under the Facility will be procured in accordance with ADB's *Guidelines on the Use of Consultants* (2013, as amended from time to time).

**Advance contracting** Under each tranche, ADB may, subject to its policies and **Retroactive financing** procedures, allow on request (a) advance contracting of works, goods, services and consultants; and (b) retroactive financing of eligible expenditures for works, goods, services and consultants up to 20% of proposed individual loan, incurred prior to loan effectiveness but not earlier than 12 months before the date of signing of the related legal agreement. INDIA and the Executing Agency acknowledge that any approval of advance contracting and/or retroactive financing will not constitute a commitment by ADB to finance the related project.

**Disbursements** Disbursements will be made in accordance with ADB's *Loan Disbursement Handbook* (2012, as amended from time to time).

The statement of expenditure (SOE) procedure will be used to reimburse eligible expenditures not exceeding \$100,000 equivalent for any individual payment. For all single payments exceeding \$100,000 equivalent, documented claim procedure, requiring supporting documents to be submitted to ADB in accordance with applicable procedures, will be followed.

**Monitoring, Evaluation, and Reporting Arrangements** The State, acting through KNNL, will be responsible for establishing an Investment Program Performance Monitoring System acceptable to ADB within six months of the effectiveness of the first loan under the MFF, including (i) procedures on data collection and reporting, (ii) performance indicators relating to the facility and Project specific outcome and outputs, and (iii) corresponding baselines and progress on target achievement. Schedule 2 hereto sets as the Design and Monitoring Framework for the Facility, against which the implementation effectiveness will be evaluated.

**Undertakings** Attached as Schedule 6 are the undertakings provided by INDIA

INDIA

ASIAN DEVELOPMENT BANK

By \_\_\_\_\_  
Ajay S. Singh  
Director DEA

By \_\_\_\_\_  
M. Teresa Kho  
Country Director

## SCHEDULE 1

### MFF CONSTITUENTS

#### A. Background

1. The State of Karnataka (the State), in the south of India, has a population of 61.1 million and covers an area of 191,976 square kilometers (5.83% of the area of India).<sup>1</sup> Although it is the sixth most urbanized state of India and has a rapidly growing economy, about 55% of the total population remains engaged in irrigated agriculture with a rural poverty rate of 26.1%. The State is water stressed with increasing inter-sectoral water demands. The Karnataka Integrated and Sustainable Water Resources Management Investment Program (KISWRMIP) will improve water availability to meet competing water demands in selected river basins by implementing integrated water resources management (IWRM) in the State. It will improve water use efficiency in irrigated agriculture to provide economic opportunities to improve rural incomes.<sup>2</sup>

2. The State is home to one-third of India's information technology and other service industries and has a gross state domestic product (GSDP) at current prices of \$97.1 billion (2011–2012). The main contribution (about 53% in 2011–2012) to GSDP is from the tertiary sector. The contribution of agriculture to GSDP has declined from 16.9% in 2010–2011 to 15.9% in 2011–2012; however agriculture is the main source of employment for about 75% of the rural population. The State population is urbanizing with the proportion of rural population decreasing from 66.0% to 61.4% (between 2001 and 2011) and an increase in proportion of urban population from 34.0% to 38.6% during the same period.<sup>3</sup>

3. Karnataka is water stressed with increasing inter-sector water demands. Although it has two major river basins (the Krishna and Cauvery) water resources are limited (approximately 1,072 m<sup>3</sup>/person/year in eastward flowing rivers).<sup>4</sup> Droughts are frequent and 70% of the annual rainfall occurs between June and September. The estimated water demand in the State is projected to rise by 40% to 52,366 million m<sup>3</sup> in 2025 from 37,419 million m<sup>3</sup> in 2000; this is particularly for industry and household water.<sup>5</sup> Due to competing demands, there will be a decline in the agricultural proportion of total water from 84% in 2000 to 73% by 2025. Meeting the anticipated rise in demand is a major challenge which if unmet, may constrain sustainable economic growth.

#### B. Sector Performance

4. The State's surface water runoff has already been substantially utilized and groundwater is also over-utilized in 40% of districts. Meeting the anticipated 40% increase in demand, between 2000 and 2025, is a major challenge which, if unmet, may threaten sustainable economic growth. Better water resources management will involve improving water use

<sup>1</sup> Government of India, Ministry of Home Affairs, Office of the Registrar General and Census Commissioner. Census 2011. <http://www.indiaonlinepages.com/population/karnataka-population.html> (accessed 9 June 2012)

<sup>2</sup> The Asian Development Bank (ADB) provided project preparatory technical assistance. ADB. 2011. *Technical Assistance to India for the Karnataka Integrated and Sustainable Water Resources Management Investment Program*. Manila (TA 7924-IND).

<sup>3</sup> Census 2011 <http://www.indiaonlinepages.com/population/karnataka-population.html> (accessed 9 June 2012)

<sup>4</sup> The Falkenmark water stress indicator defines water supplies below 1,000 m<sup>3</sup>/person/year as water stress that will impede economic growth. M. Falkenmark. 1989. *The Massive Water Scarcity Now Threatening Africa: Why Isn't It Being Addressed?* <http://www.jstor.org/stable/4313541>

<sup>5</sup> Government of India, Planning Commission. 2007. *Karnataka Development Report 2007*. New Delhi: Academic Foundation.

efficiency in existing water uses including increased reuse and tapping remaining under-used water resources to maintain the overall basin water balance.

5. Approximately 2.46 million hectares (ha) of irrigation has been developed in Karnataka since 1947,<sup>6</sup> however cropping intensity remains below design expectations and substantial gaps persist in many systems between the irrigation potential created and that utilized. In 2009–2010 only about 59%, 1.45 million ha of irrigation potential was utilized. Modernization of irrigation infrastructure and improving the performance of irrigation will be critical to bridge the gap between irrigation potential created and utilized and to improve agricultural productivity. Enhancing performance of irrigated agriculture will involve improved management of water resources, upgrading of irrigation infrastructure and control systems, strengthening of management capacity, improvement of agricultural practices, and strengthening farm to market linkages.

6. **Constraints.** Key constraints in efficient water resources management are three-fold:

- (i) institutional aspects: fragmentation of water resources management between a range of agencies resulting in a lack of coordinated planning for water resources utilization;
- (ii) under performance of irrigation sector which suffers from chronic problems of deficient infrastructure (deterioration due to insufficient maintenance and lack of water control structures), management problems (inadequate service orientation of operators and low participation by farmers), and limited take-up of water saving crops and practices;
- (iii) inadequate implementation of command area development for expanding irrigation distribution network at tertiary and field levels and strengthening of water user associations for participatory irrigation management.

7. **Opportunities.** Karnataka has a number of enabling factors that will facilitate adoption of an IWRM approach including the recognition of the scarcity and threats to water resources, progressive policy statements, a history of large investments in water resources management, technical capacity and a progressive outlook as exemplified by new and semi-independent institutions such as the irrigation corporations (or nigams) and the Advanced Centre for Integrated Water Resources Management (AC-IWRM).

8. The road map and the program supports key elements of National Water Policy, National Water Mission and the State Water Policy including (i) fostering integrated management of water resources, and (ii) water conservation and improvement of system efficiencies. It also complements ADB's Country Partnership Strategy for India (2013–2017) by supporting infrastructure development for water resources management, investing in irrigation infrastructure to enhance value-addition in agriculture and developing measures to increase water use efficiency.<sup>7</sup> Consistent with ADB's Strategy 2020<sup>8</sup> the program will reinforce core areas of operations, including water resources management and the delivery of efficient and sustainable irrigation. In alignment with the ADB Water Operational Plan 2011–2020 the program will (i) improve water governance by embedding IWRM as an adaptive management

<sup>6</sup> Data for 2009-2010 seasons. Source: Economic Survey of Karnataka 2010-11 and 2011-12, Government of Karnataka.

<sup>7</sup> ADB. 2013. *India: Country Partnership Strategy 2013–2017*. Manila.

<sup>8</sup> ADB. 2008. *Strategy 2020: The Long-Term Strategic Framework of the Asian Development Bank 2008–2020*. Manila.



process in river basins, and (ii) improving water use efficiency with adequate measurement to increase water availability for widely competing users.

## **C. Road Map**

### **1. Vision and Objectives**

9. **Sector Road Map and Investment Program.** The Road Map and investment program for the KISWRMP have been prepared with a primary focus on supporting the State to improve water resources availability to meet the increasing and competing demands from agriculture, industry, mining and municipal water users while preserving river ecology. The program will support IWRM in selected basins, including institutional development, capacity development and modernization of irrigation infrastructure and services in the state of Karnataka. It will support increased water use efficiency to increase economic opportunities, particularly to women, and improved rural incomes. The road map builds on initiatives that the State has already taken, or has planned, and also the consultations held during the program preparatory stage. KISWRMIP will cover a part of the State's investment plan for irrigation, and provides a common framework for implementing State's vision for the water sector.

10. **Vision, Goals and Principles.** Following the policy framework and development priorities of the Government and the State, the road map and investment program will support investments for improving management of water resources in selected river basins in Karnataka. Specific goals include: (i) strengthening institutions and human resources for integrated river basin management; (ii) strengthening the State's institutions and policies for IWRM; (iii) enhancing arrangements and technologies used for water sector data, information, and knowledge management; (iv) modernizing irrigation services, including upgraded infrastructure with improved operation and maintenance to implement IWRM based irrigation management; (v) capacity development and improved support services to increase water use efficiency and water productivity in agriculture and other sectors; and (vi) increasing stakeholder involvement and capacity building among water users and managers to make water services responsive to evolving requirements, including the impacts of climate change. Implementation will be guided by the principles of (i) informed participatory decision making by stakeholders; (ii) coordinated and integrated organizational linkages at all stages; (iii) accountability and transparency; (iv) effectiveness to be monitored based on clearly defined result targets; (v) efficiency pursued with sound step-by-step process management; and (vi) a knowledge driven approach with flexibility for adjustments.

11. The State has made commitments to improve IWRM with (i) the transformation of the Irrigation Department to the Water Resources Department, with the creation of three divisions Water Resources Development Organization, Command Area Development Authorities and the Nigam; (ii) establishment of the Advanced Centre for IWRM as a centre of excellence; (iii) investments in canal system upgrading; and (iv) high efficiency irrigation. The Facility will support further advances in water resources management to enable the state to adopt and adapt IWRM for sustainable economic, social and environmental development. This is in view of the competing demands for water resources and predicted climate change impacts on limited water availability within the State.

12. The Road Map ultimately seeks to enhance sustainable water security in Karnataka. To achieve this vision, the following policy and development objectives are considered in the Road Map:

**a. Integrated Water Resources Management**

- (i) Strengthening institutional capacity of the Water Resources Department (WRD) and the AC-IWRM to implement IWRM in selected river basins in Karnataka;
- (ii) Preparation and implementation of 3 river basin plans to better manage water resources. This will include preparation of water resources inventory systems and decision support systems;
- (iii) Strengthening the policy framework to compliment the IWRM process; and
- (iv) Capacity building and certification<sup>9</sup> of the WRD (including its associated agencies like Karnataka Neeravari Nigam Limited [KNNL]) in IWRM.

**b. Technical Sustainability**

- (i) Modernization<sup>10</sup> of existing irrigation systems to improve their performance in delivery of irrigation supplies. This will include upgrading channels with selective lining and flow management systems; and
- (ii) Implementation of asset management and strengthening programs for better operation and maintenance of irrigation infrastructure leading to efficient service delivery.

**c. Institutional Sustainability**

- (i) Improving institutional capacity to implement IWRM;
- (ii) Strengthening capacity of KNNL to better operate, maintain and manage main irrigation systems by adopting diagnostic approach to system improvement and value engineered solutions for infrastructure investments;
- (iii) Strengthening capacity of Command Area Development Authority (CADA) to operate, maintain and manage the tertiary irrigation system, under take participatory irrigation management (PIM) activities and to better undertake their water management responsibilities;
- (iv) Strengthen capacity of WUCS as field based entities capable of operating and maintaining water distribution and financial sustainability by collecting user fee for system maintenance; and
- (v) Improving WUCS skills in agricultural productivity for enhancing yields and crop diversification leading to improved livelihoods.

**2. Strategic Directions**

13. The Road Map comprises an Investment Plan for physical and non-physical investments and a policy and institutional strengthening framework that ensures outcomes can be met and investments are technically, financially and environmentally sustainable. Physical investments will address the technical and environmental sustainability objectives, while non-physical investments will address institutional sustainability for meeting IWRM objectives. Investments

<sup>9</sup> The AC-IWRM will be accredited by UNESCO-IHE as an accredited institute for professional training in IWRM.

<sup>10</sup> Irrigation modernization is a process of technical and managerial upgrading (as opposed to mere rehabilitation) of irrigation schemes combined with institutional reforms, with the objective to improve resource utilization (labor, water, economic, environmental) and water delivery service to farms. Food and Agriculture Organization, 1996

represent a fraction of the State's medium-term and long-term needs, and will assist Karnataka meet its economic development agenda for 2020.<sup>11</sup> Vision 2020 prioritizes the sustainability of the State's environment and natural resources (including water) and anticipates increasing urbanization and industrialization. Increasing irrigation potential and improved water resources management are high priorities in the State's water and poverty reduction agendas.

#### **a. Physical Investments**

14. Physical investments will support IWRM principles specifically for water use efficiency, including: (i) introduction of telemetry on irrigation subprojects and rivers within the sub-basin to improve operational and hydrological data collection, contributing to the water resources information system for planning water use; (ii) modernization of the main irrigation systems comprising main, branch and sub-branch canals, focusing particularly on increasing control points for better regulation/operation of the systems and selective channel lining to improve conveyance efficiency and on-line and offline storages for flow regulation on the main system, and (iii) command area development for field distribution network which will be maintained by the WUCS. This will comprise introduction of formalized field channels which are sectioned for optimal efficiencies, distribution points, buried pipe networks and high efficiency irrigation systems to improve water use efficiency.

#### **b. Non-physical Investments**

15. Non-physical investments will include (i) capacity development and institutional support to AC-IWRM to strengthen it as a centre of excellence and think tank on IWRM, (ii) certification of professional staff in IWRM through the AC-IWRM which will be an accredited institute; (iii) WUCS capacity building in improved participatory irrigation management practices and collective actions for increasing agricultural productivity, and (iv) promote managerial and technical advances and improve citizen communication and participation; and (v) capacity development for KNNL for project management.

### **3. Investment Plan**

16. The Investment Plan is estimated at \$225 million :

- (i) Physical investments are estimated to cost \$153.44 million and comprise \$3.50 million (approximately 2%) for telemetry, \$121.51 million (approximately 79%) for modernized irrigation infrastructure and \$31.93 million (19%) for command area development.
- (ii) Non-physical investments are estimated to cost \$72.0 million and will include
  - a) capacity building to (1) AC-IWRM and professionals in IWRM (13.3% of nonphysical investments)
  - b) capacity building to assist KNNL, CADA and WUCS with project-level irrigation modernization, system management and PIM estimated to cost \$7.3 million (10.1% of non-physical investments).

<sup>11</sup> The core elements of Karnataka's Vision 2020 [Karnataka State Planning Board 2008. Karnataka. A Vision for Development. Bangalore] include the need (i) to eliminate poverty and deprivation at all levels and achieve Millennium Development Goals (MDGs) by 2015, (ii) to make Karnataka a globally competitive destination and a leader among Indian States, and (iii) to institutionalize good governance across the State through enhanced transparency, accountability and participation.

17. **Sequencing.** Investments will be financed by the public sector. Their sequencing has been designed to enable: (i) AC-IWRM to be exposed to international best practices for IWRM and to adapt these to local conditions prior to implementation; (ii) the selection of a medium irrigation subproject to rapidly demonstrate principals of IWRM and show quick results in improved water resources management and efficiency, WUCS strengthening and improved agricultural practices; (iii) progressive capacity development of AC-IWRM, KNNL, CADA and WUCS; and (iv) testing and innovation, with a feedback mechanism to incorporate lessons learned into future tranches.

#### **4. Policy and Institutional Actions Framework**

18. To achieve the Road Map objectives and implement the Investment Plan, the following policy and institutional actions framework will be adopted, which includes defined time frames and/or milestones (Table 1).

**Table 1: Integrated Water Resources Management Roadmap**

<b>Key IWRM Theme</b>	<b>Definition and Activities</b>	<b>Program Objectives</b>	<b>Responsibilities</b>	<b>Timing</b>
1. Integrated River Basin Management	<p>Activities to improve water access and services for users, including the environment, in river basins based on the principles of integrated water resources management. Required activities include:</p> <ul style="list-style-type: none"> <li>(i) Establishment of effective river basin management arrangements including financing arrangements;</li> <li>(ii) Preparation of State River Basin Inventory;</li> <li>(iii) Development and implementation of river basin plans in selected river basins including participation of stakeholders, updating of water resource inventory, inter-sectoral planning of water development and management; groundwater development and management plans; water quality and quantity planning and management systems to maintain river health; and plan financing;</li> <li>(iv) Preparation of pilot, community based, integrated Land and Water Management Plans in selected sub-basins and/or irrigation areas;</li> <li>(v) Operational management systems to implement basin water plans and where possible to include flow monitoring, volumetric measurement of abstractions, flow control and enforcement, and sharing of water; and</li> <li>(vi) Implementation of public awareness, information education and communication systems and campaigns on relevant water sector issues.</li> </ul>	<ul style="list-style-type: none"> <li>(i) Access for all people in the basin to adequate water supply and sanitation</li> <li>(ii) Water consumption is within the sustainable limits of water availability in river basins and sub-basins. Sources of water for domestic, irrigation, industrial, hydropower, aquaculture, leisure, and other uses are developed and managed consistent with water availability and sustainability</li> <li>(iii) River basin planning is transparent, integrative, consultative, effective, and uses information based systems including modelling and spatial data</li> <li>(iv) River basin planning and management integrates rain water, surface water, groundwater; water quantity, water quality; water and land use; and in-stream flow needs with all relevant sectors involved</li> <li>(v) Agreed policies, rules, and operational procedures including monitoring to implement river basin plans and water use by different sectors are implemented effectively</li> </ul>	<p>AC – IWRM WRD WRDO</p> <p>Directly involved stakeholders: CWC, WRA, TB, KNNL, other nigrams, DMI, CADA, DA, DE, DF, DMG, WD, KUWSDB, WUCS; local government, civil society</p>	August 2021
2. Institutions and	“Institutions” is used in its broadest sense	(i) AC-IWRM recognized as an	AC-IWRM	August

Key IWRM Theme	Definition and Activities	Program Objectives	Responsibilities	Timing
Policies for IWRM	<p>including organizations, legislation, policies and other protocols that define the relations among water sector organizations and their clients. Planning for IWRM (in this context, river basin planning) is seen as a mechanism for promulgating and implementing policies of government. Activities required include:</p> <ul style="list-style-type: none"> <li>(i) Organizational alignment for IWRM processes with interim arrangements initially for selected river basins</li> <li>(ii) Organizational capacity building for IWRM processes, including career development and reward systems</li> <li>(iii) Alignment and implementation of legislative framework</li> <li>(iv) Preparation of a State IWRM Strategy to and development of water resources policies aligned with economic, social and environmental objectives</li> <li>(v) Regulation (such as sustainable water utilization, wastewater discharge and water tariff approaches)</li> <li>(vi) Institutional development for participatory irrigation management (PIM) including formation and strengthening water user committees</li> <li>(vii) Capacity building of staff of agencies including IWRM Certification Program</li> </ul>	<p>international standard think tank providing advice to SGOK</p> <ul style="list-style-type: none"> <li>(ii) Appropriate IWRM institutional frameworks within SGOK with clearly defined responsibilities and working partnerships with stakeholders in Karnataka leading to coordinated water resource management in the State</li> <li>(iii) National and international IWRM research and policy partnerships established with AC-IWRM providing access to state-of-art knowledge</li> <li>(iv) State IWRM Strategy in place and regularly updated and guiding strengthening of water sector governance</li> <li>(v) Policies, procedures and responsibilities suitable for Karnataka piloted and established to sustainably manage water resources (surface water, groundwater, quantity and quality) and involving major water users including the environment</li> <li>(vi) Decision makers, advisers, technical experts, and other key stakeholders effectively carry out their responsibilities with regard to water resources policy, planning and management</li> <li>(vii) Policy makers and other stakeholders knowledge and willingness raised to undertake necessary reform measures</li> <li>(viii) Capacity of WRD and water</li> </ul>	WRD CADA Directorate Directly involved stakeholders: CWC, WRA,	2021

Key IWRM Theme	Definition and Activities	Program Objectives	Responsibilities	Timing
		related agency staff raised to ensure long term IWRM		
3. Data, Information, and Knowledge Management	<p>Data, information and knowledge are fundamental to all aspects of decision making in water resource planning and management. IKM theme will include:</p> <ul style="list-style-type: none"> <li>(i) Preparation of a Strategy and Plan for Strengthening the Water Resources Information System;</li> <li>(ii) Data collection on surface and groundwater quantity and quality and collation of other natural resource data, such as land cover, ecosystems, etc., as well as such socioeconomic data such as population, poverty, and land use; for priority river basins;</li> <li>(iii) Hydrological monitoring in the K-8 and other priority river basins;</li> <li>(iv) Data archiving and management, including the collation of data from various sources, validation, computerization, and so on;</li> <li>(v) Data sharing and dissemination among government agencies, research establishments, and providing public access to data;</li> <li>(vi) Identification, development and implementation of appropriate decision-support tools, including geographic information systems, hydrologic and hydraulic models, and other analytical tools; and</li> <li>(vii) Research to increase knowledge in such fields as catchment processes, demography, etc., as well as new technologies for water conservation and environmental protection.</li> </ul>	<ul style="list-style-type: none"> <li>(i) IWRM and river basin planning and policies are based on strong data and information sources and decision support systems</li> <li>(ii) A comprehensive State database on land and water resources in place and in a form that is accessible to all who need it to facilitate sustainable management of the State's water resources</li> <li>(iii) Agencies concerned with water management monitor and record water resources to agreed standards and according to their responsibilities</li> <li>(iv) Effective data-sharing arrangements in place among agencies and stakeholders in the basin and with central agencies including data sharing agreements</li> <li>(v) Research programs are providing highly relevant information to support IWRM</li> </ul>	AC-IWRM WRDO KNNL, other nigrams, Directly involved stakeholders: CWC, DPS, DITB; DeG; DMI, DA, DE, DF, DMG, WD, KUWSDB	August 2020

Key IWRM Theme	Definition and Activities	Program Objectives	Responsibilities	Timing
4. IWRM Based Irrigation Management	<p>Modernization of irrigation services, consistent with water management policies including infrastructure for irrigation water supply, integration with tank storages, command area works, water measurement and control systems, and improved operation and maintenance of the infrastructure developed in the process. It includes:</p> <ul style="list-style-type: none"> <li>(i) Participatory project planning, including irrigation modernisation planning (infrastructure and management development distinct from broader basin planning); matching cropping patterns to available water and increased income, water distribution plans, responsive to stakeholders;</li> <li>(ii) Modernising systems including canal lining, structure repair / replacement; incorporating tanks and off line storage, command area improvement including pipeline systems, drip irrigation, improved drainage systems to eliminate waterlogging;</li> <li>(iii) Automatic flow measurement and transmission of flow data for the main distribution system to monitor and enable volumetric measurement for each outlet to enable water control and bulk water charging for each WUCS;</li> <li>(iv) Operating and maintaining infrastructure including timely and volumetrically based water supply, asset management and full recovery of at least O&amp;M costs;</li> <li>(v) Capacity building of both system operations staff and water user organisations; and</li> </ul>	<ul style="list-style-type: none"> <li>(i) All water supply infrastructure capable of operating at design capacity</li> <li>(ii) Sustainable asset-management practices in place for all water-related infrastructure in the basin</li> <li>(iii) Institutions managing the infrastructure, volumetric supply of irrigation water to users and cost recovery of O&amp;M at government, water authority and WUCS levels</li> <li>(iv) Reliable delivery of irrigation services within the constraints of available water resources</li> <li>(v) Commitment of involvement of water users in planning and management of irrigation systems</li> </ul>	<p>KNNL and other nigams CADA Directorate</p> <p>Directly involved stakeholders: DA, WUCS</p>	August 2021



Key IWRM Theme	Definition and Activities	Program Objectives	Responsibilities	Timing
	(vi) Establishment of effective self-managed WUCS institutions for participatory irrigation management.			
5. Water Use Efficiency and Water Productivity	<p>Increasing water use efficiency (WUE) and water use productivity (WUP) is a high government priority in order to save water that can be used for other purposes including use by industry, urban areas, and irrigation. However by focusing on single irrigation systems impacts at the larger basin level on downstream users and the environment are often overlooked. Also a focus on agricultural production does not necessarily translate into increased incomes to farmers. This theme will include:</p> <ul style="list-style-type: none"> <li>(i) Development of the concepts and understanding of water productivity, water use efficiency, crop and agricultural productivity and their practical application to IWRM</li> <li>(ii) Basin scale assessments of water use efficiency and water productivity including by remote sensing to identify the actual scope for making 'real' water savings as well as to support river basin planning and management.</li> <li>(iii) Improving WUE and Irrigation Systems by undertaking comprehensive assessments of irrigation systems using the FAO MASSCOTE tools, the assessments would also support Irrigation modernisation and Land and Water Management Plan activities</li> </ul>	<ul style="list-style-type: none"> <li>(i) River basin and water resources planning treats the water resource as finite</li> <li>(ii) Increased provision of water for irrigation or industry expansion is based on real water savings.</li> <li>(iii) Modernisation of irrigation systems is based on comprehensive assessments of system configuration and conditions</li> <li>(iv) The interests of farmers of increased profitability is recognised in irrigation and water resources planning</li> </ul>	AC-IWRM KNNL and other nigams CADA Directorate Directly involved stakeholders: DA, DITB	February 2021
6. Stakeholder involvement and Capacity Building	Engagement of relevant stakeholders in planning and implementation, monitoring and evaluation of water resources management is a key "foundation" of IWRM.	(i) Communities in selected basins are aware of and actively participate in the conservation, utilization, and protection of	AC-IWRM KNNL and other nigams	August 2021

Key IWRM Theme	Definition and Activities	Program Objectives	Responsibilities	Timing
	<p>Stakeholders include the communities, businesses and government agencies active in the basins. Building the capacity of stakeholders for IWRM is important to sustainable water resources management. Stakeholder participation will include:</p> <ul style="list-style-type: none"> <li>(i) Education, awareness raising, and capacity building of communities and individuals on water management issues; and</li> <li>(ii) Community involvement in river basin planning and management, irrigation modernisation, and Land and Water Management Plan programs.</li> </ul>	<p>natural resources</p> <ul style="list-style-type: none"> <li>(ii) Communities are actively involved in deciding levels of services and water tariffs by water management utilities</li> <li>(iii) Local communities are actively participating in forums for planning and managing basin water resources</li> <li>(iv) Government commitment to stakeholder and community participation in river basin planning, water resources management and irrigation system management</li> </ul>		

AC-IWRM = Advanced Centre of IWRM, CADA = Command Area Development Authorities, CWC = Central Water Commission, DA = Department of Agriculture, DE = Department of Ecology and Environment, DeG = Department of e-Governance, DF = Department of Fisheries, DITB = Department of Information Technology and Biotechnology, DMG = Department of Mines and Geology, DMI = Department of Minor Irrigation, DPS = Department of Planning and Statistics, KNNL = Karnataka Neeravari Nigam Limited, KUWSDB = Karnataka Urban Water Supply and Sewerage Board, TB = Tungabhadra Board, WD = Watershed Development Department, WRA = Water Resources Authority, WRD = Water Resources Department, WRDO = Water Resources Development Organization, WUCS = Water User Cooperative Societies.

## D. Investment Program

19. The investment program is estimated to cost \$225 million (Table 2). The government has requested ADB to finance through an MFF an amount up to \$150 million equivalent from ADB's ordinary capital resources to finance a part of the Program.

**Table 2: Investment Program**  
(\$ million)

Item	Amount <sup>a</sup>
<b>A. Base Cost<sup>b</sup></b>	
Output 1: State and basin institutions strengthened for IWRM	21
Output 2: Irrigation system infrastructure and management modernized	163
Output 3: Program management systems operational	16
<b>Subtotal (A)</b>	<b>200</b>
<b>B. Contingencies<sup>c</sup></b>	<b>20</b>
<b>C. Financing Charges During Implementation<sup>d</sup></b>	<b>5</b>
<b>Total (A+B+C)</b>	<b>225</b>

<sup>a</sup> Includes taxes and duties of \$9 million to be financed from government resources.

<sup>b</sup> In February 2014 prices.

<sup>c</sup> Physical contingencies computed at 5% for civil works, 10% for consulting services and equipment and, zero for other items. Price contingencies computed at 1.8 to 2.2% on foreign exchange costs and 8.0% to 9.6% on local currency costs using ADB Domestic Cost Escalation Factors (FY2012–FY2016) (November 2013); includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

<sup>d</sup> Includes interest and commitment charges. Interest during construction for ADB loans has been computed at the 6-month LIBOR Floating Rate (ADB, 6 January 2014) 0.3452% plus a spread of 0.5000%, plus maturity premium 0.1000%, less rebate 0.1900% or 0.7550% overall. Commitment charges for an ADB loan are 0.15% per year to be charged on the undisbursed loan amount. Both paid from government resources.

Source: Asian Development Bank estimates (January 2014).

20. The MFF will be implemented over a 7-year period, with two tranches, subject to the government's submission of related periodic financing requests, execution of the related loan and project agreements for each tranche, and fulfillment of terms and conditions and undertakings set forth in this framework facility agreement.

## E. Financing Plan

21. The first tranche will be implemented between 2014 and 2018 and will be 4 years in duration. For Tranche 1, the government has requested a loan of \$31 million from ADB ordinary capital resources (OCR), with \$16.6 million to be financed by the SGOK and \$0.4 million by beneficiaries.<sup>12</sup> It is expected that the second tranche will commence in 2015 for 6 years until September 2021 when the implementation of the MFF will be completed. The second tranche will be for an estimated amount of \$177 million, of which \$119 million is expected to be from ADB OCR, \$53.4 million from the government, and \$4.6 million from beneficiaries. Detailed cost estimates by expenditure category and detailed cost estimates by financier are included in the facility administration manual.

22. The first tranche of the MFF will have a 25-year term, including a grace period of five years, an annual interest rate determined in accordance with ADB's London interbank offered

<sup>12</sup> Beneficiaries are WUCS, who will provide upfront contributions for implementations of command area development (CAD) works. The contributions will be the equivalent of 10% the cost of the CAD works. However, failing such contributions, the government will be responsible for the beneficiaries' portion of financing.

rate (LIBOR)-based lending facility, a commitment charge of 0.15% per year, and such other terms and conditions set forth in the draft loan and project agreements. The government will make the relevant portion of the proceeds of each tranche available to the state, promptly and on terms and conditions acceptable to ADB, for the implementation of the program.

**Table 3: Financing Plan**

<b>Source</b>	<b>Investment Program</b>		<b>Project-1</b>	
	<b>Amount (\$ million)</b>	<b>Share of Total (%)</b>	<b>Amount (\$ million)</b>	<b>Share of Total (%)</b>
Asian Development Bank	150	67	31.0	64
Government	70	31	16.6	35
Beneficiaries <sup>a</sup>	5	2	0.4	1
<b>Total</b>	<b>225</b>	<b>100</b>	<b>48.0</b>	<b>100</b>

<sup>a</sup> Beneficiaries are water user cooperative societies, which will provide up-front contributions for implementation of command area development works. The contributions will be the equivalent of 10% of the cost of the command area development works. However, failing such contributions, the government will be responsible for the beneficiaries' portion of financing.

Source: Asian Development Bank estimates.

## SCHEDULE 2

### DESIGN AND MONITORING FRAMEWORK FOR THE INVESTMENT PROGRAM

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
<p><b>Impact</b> Improved sustainable water security in selected river basins in Karnataka</p>	<p>By 2025: Non-agricultural use increases from 16% (in 2000) to 27% of total water use</p> <p>State gross value of annual agricultural production increases from Rs620.6 billion to Rs931.0 billion (at 2012 constant prices)</p>	<p>WRD and/or KNNL annual reports and scheme monitoring reports</p> <p>Economic Survey of Karnataka, FY2013</p>	<p><b>Assumption</b> Interstate water agreements are maintained</p> <p><b>Risk</b> Climate change impacts exceed projections</p>
<p><b>Outcome</b> IWRM successfully implemented in selected river basins in Karnataka</p>	<p>By 2021: River basin management strategies institutionalized</p> <p>Systems for quantitative water use by sectors are established (from 2018)</p> <p>99 out of 110 WUCSs confirm receipt of water service (baseline = 0)</p>	<p>WRD and/or KNNL annual reports and scheme monitoring reports</p> <p>WRA annual reports</p> <p>AC-IWRM annual report and state annual budget report</p> <p>KNNL annual and scheme monitoring reports</p>	<p><b>Assumption</b> Continued political and community and stakeholder support to sustain and proceed with reforms</p>
<p><b>Outputs</b> 1. State and basin institutions strengthened for IWRM</p>	<p>By 2021: At least three river basin plans are developed and implemented (baseline = 0)</p> <p>At least 600 WRD staff (of which about 200 are women staff) are certified in IWRM (baseline = 0)</p> <p>State water resources information systems established (baseline = 0)</p>	<p>River basin management meeting minutes</p> <p>WRD and KNNL reports and minutes</p> <p>AC-IWRM and WRA annual reports</p>	<p><b>Assumption</b> Certified WRD staff remain in office</p>

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks								
2. Irrigation system infrastructure and management modernized	<p>By 2021: 300 km of irrigation canal upgraded (baseline = 0 km)</p> <p>Asset management plans implemented for main system infrastructure on three selected systems (baseline = 0)</p> <p>More than 82 of 110 WUCSs operate and maintain transferred infrastructure, including fee collection (baseline = 0)</p> <p>About 30% of WUCS management boards are women</p>	<p>WRD and/or KNNL annual reports and scheme monitoring reports</p> <p>CADA annual report</p>	<p><b>Assumption</b> State government continues to support irrigation management transfer, and WUCSs collecting irrigation service fees</p>								
3. Program management systems operational	Project outputs delivered on time and within budget	Quarterly disbursement and contract award projections and financial reports prepared by WRD and/or KNNL									
<p><b>Activities with Milestones</b></p> <ol style="list-style-type: none"> <li>1. State and basin institutions strengthened for IWRM <ol style="list-style-type: none"> <li>1.1 Institutional and/or capacity assessment (WRD, KNNL, AC-IWRM) completed (November 2014)</li> <li>1.2 Staff appointed for AC-IWRM (November 2014)</li> <li>1.3 IWRM certification program implemented (September 2015)</li> <li>1.4 River basin resources inventories prepared (May 2017)</li> <li>1.5 State IWRM strategy endorsed by IWRM steering committee (May 2019)</li> <li>1.6 Water resources system established and used for river basin planning (September 2020)</li> <li>1.7 Pilot projects completed for land and water management, remote sensing of water consumption, water use efficiency, and water productivity (March 2021)</li> <li>1.8 River basin plans prepared and implemented in three subbasins (August 2021)</li> </ol> </li> <li>2. Irrigation system infrastructure and management modernized <ol style="list-style-type: none"> <li>2.1 Location for telemetry systems throughout subbasin identified (July 2014)</li> <li>2.2 Civil works for Gondi irrigation subproject initiated (April 2015)</li> <li>2.3 Feasibility studies and detailed project reports for Vijaynagara and</li> </ol> </li> </ol>			<p><b>Inputs (\$ million)</b></p> <table border="0"> <tr> <td>ADB</td> <td style="text-align: right;">150.0</td> </tr> <tr> <td>Government</td> <td style="text-align: right;">70.0</td> </tr> <tr> <td>Beneficiaries</td> <td style="text-align: right;">5.0</td> </tr> <tr> <td><b>Total</b></td> <td style="text-align: right;"><b>225.0</b></td> </tr> </table>	ADB	150.0	Government	70.0	Beneficiaries	5.0	<b>Total</b>	<b>225.0</b>
ADB	150.0										
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<b>Design Summary</b>	<b>Performance Targets and Indicators with Baselines</b>	<b>Data Sources and Reporting Mechanisms</b>	<b>Assumptions and Risks</b>
	<p>TLBC irrigation subprojects prepared (before May 2015)</p> <p>2.4 Civil works for Vijaynagara and TLBC irrigation subprojects initiated (May 2016)</p> <p>2.5 Main system asset management and operation and maintenance plan for all irrigation subprojects prepared (May 2020)</p> <p>2.6 Telemetry systems throughout selected subbasins installed (May 2021)</p> <p>2.7 Capacity building of 110 WUCSs completed and service agreement signed with KNNL at Vijaynagara and TLBC irrigation subprojects (August 2021)</p> <p>3. Program management systems operational</p> <p>3.1 PMU and PIO fully staffed with an appointed project director by loan effectiveness (October 2014)</p> <p>3.2 Program MIS operational 3 months after project 1 effectiveness (December 2014)</p> <p>3.3 All required equipment procured (December 2014)</p> <p>3.4 PSC recruited and monitored within 6 months of loan effectiveness (December 2014)</p> <p>3.5 Annual disbursement projections met (commencing May 2015)</p> <p>3.6 Periodic financing for project 2 submitted (August 2015)</p> <p>3.7 Midterm effects monitoring (January 2018) and investment program effects monitoring at completion stage (May 2021)</p>		

AC-IWRM = Advanced Centre for Integrated Water Resources Management, ADB = Asian Development Bank, CADA = Command Area Development Authority, FY = fiscal year, IWRM = integrated water resources management, km = kilometer, KNNL = Karnataka Neeravari Nigam Limited, MIS = management information system, PIO = project implementation office, PMU = project management unit, PSC = project support consultant, TLBC = Tungabhadra Left Bank Canal, WRA = Water Resources Regulatory Agency, WRD = Water Resources Department, WUCS = water users cooperative society.

Note: Baseline data supplied by project preparatory technical assistance for Karnataka Integrated and Sustainable Water Resources Management Investment Program (TA 7954-IND).

Source: Asian Development Bank.

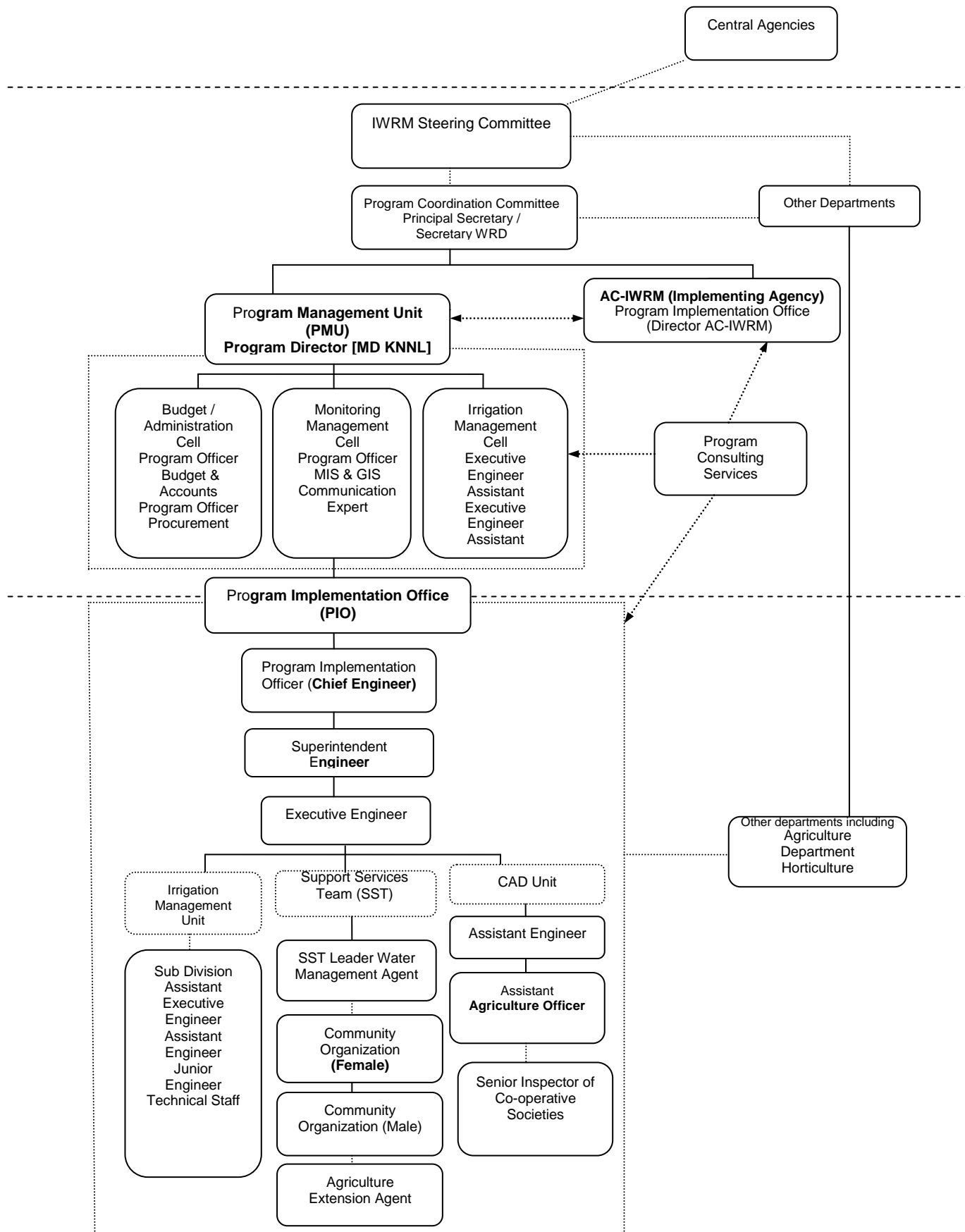
## SCHEDULE 3

### IMPLEMENTATION FRAMEWORK

#### B. Project Management Set Up and Functions

1. The State will maintain for the duration of the program an Integrated Water Resources Management (IWRM) Steering Committee chaired by Chief Secretary and comprising representatives from concerned departments (including the Water Resources Department, the Agriculture Department, the Urban Department, the Rural Department, the Industries Department, the Karnataka Urban Infrastructure Finance and Development Corporation, the Karnataka Water Supply and Drainage Board, among others) mandated and empowered to provide strategic direction and coordinate IWRM programs in the State. The Central Water Commission will be invited to be a member of the IWRM Steering Committee.
2. The State will establish, within three months of the first loan approval, and maintain for the duration of the program, a Program Coordinating Committee to oversee and guide the implementation of the Karnataka Integrated and Sustainable Water Resources Management Investment Program (KISWRMIP) and provide policy direction in all other matters outside IWRM.
3. The KNNL will establish and resource a PMU for this program, led by a suitably qualified full time Program Director, that will be responsible for management, monitoring and supervision of the facility and each subproject no later than 31 October 2014. KNNL will also establish project implementation offices corresponding to the irrigation zone of the subproject to be developed. Detailed responsibilities for various implementing structures are available in Table 1.
4. The PMU and PIOs will employ sufficient staff with adequate and relevant expertise and gender balance, and will be equipped with necessary office space, facilities, equipment, support staff and management information systems for the duration of the Facility. To the extent possible, the same persons will continue to be assigned to key positions in the PMU for the duration of the Facility. The Investment Program Director would be a senior civil service officer, with due power to make decisions and responsible for program management. S/he will be assisted by Chief Engineers, Superintending Engineers, Executive Engineers and other civil service officers, responsible for project implementation in each of the PIOs.
5. The State will ensure that contractual documents prepared for irrigation infrastructure modernization to be used under the individual Projects, as described under Output 2, or otherwise, are provided to ADB for prior review and approval.





**TABLE 1: IMPLEMENTATION ARRANGEMENTS**

<b>Project implementation organizations</b>	<b>Management Roles and Responsibilities</b>
<ul style="list-style-type: none"> <li>• State IWRM steering committee</li> </ul>	<p>State IWRM steering committee (IWRM SC) has already been constituted (through SGOK order in 2010) to coordinate the activities of key stakeholders associated with IWRM.</p> <p>The existing IWRM SC will serve to:</p> <ul style="list-style-type: none"> <li>(i) coordinate activities, provide guidance and resolve issues for KISWRMIP;</li> <li>(ii) provide policy direction on matters relating to IWRM in Karnataka;</li> <li>(iii) provide strategic guidance and oversee the coordination IWRM programs in the State; and</li> <li>(iv) ensure coordination on water resource management among State agencies.</li> </ul> <p>The IWRM Steering Committee, constituted vide Government Order dated 19-07-2010, will comprise:</p> <ul style="list-style-type: none"> <li>(i) Chief Secretary (chair),</li> <li>(ii) Principal Secretary, Water Resources Department (member secretary),</li> <li>(iii) Principal Secretary, Urban Development Department,</li> <li>(iv) Principal Secretary, Rural Development Department,</li> <li>(v) Principal Secretary, Agriculture Department,</li> <li>(vi) Principal Secretary, Commerce and Industries Department,</li> <li>(vii) Principal Secretary, Forest, Ecology and Environment Department,</li> <li>(viii) Secretary, Minor Irrigation,</li> <li>(ix) Managing Director, KUIDFC,</li> <li>(x) Managing Director, Karnataka Urban Water Supply and Drainage Board, and</li> <li>(xi) Chairman, Bangalore Water Supply and Sanitation Board.</li> </ul> <p>The IWRM SC will meet as required however, at least twice in a year.</p>
<ul style="list-style-type: none"> <li>• Program Coordination Committee</li> </ul>	<p>The Program coordination committee (PCC) will be established under the chairmanship of Principal Secretary, WRD to provide:</p> <ul style="list-style-type: none"> <li>(i) program oversight,</li> <li>(ii) policy guidance, and</li> <li>(iii) facilitate inter-agency coordination among all relevant departments and agencies related to KISWRMIP activities, support institutionalize effective mechanisms to plan, improve and manage the program initiatives.</li> </ul> <p>The members of the PCC will include:</p> <ul style="list-style-type: none"> <li>(i) Secretaries WRD and Minor Irrigation Department,</li> <li>(ii) Managing Directors of Nigams (KNNL, KBJNL, CNNL),</li> <li>(iii) Director AC-IWRM,</li> <li>(iv) Director of Water and Land Management Institute,</li> <li>(v) Director Karnataka Engineering Research Stations,</li> <li>(vi) Chief Engineers of Water Resources Development</li> </ul>

Project implementation organizations	Management Roles and Responsibilities
	<p>Organization and Hydrology and Central Mechanical Organization,</p> <p>(vii) Principal of the Engineering Staff College,</p> <p>(viii) zonal Chief Engineers where the projects under the program are under implementation; Chief Engineer Command Areas Development Authority (CADA) Directorate, and</p> <p>(ix) relevant CADAs In-charge officers and representative of Agriculture Department.</p> <p>The member secretary of PCC will be the program director (PD) of KISWRMIP who is the Managing Director of KNNL. The PCC will meet as and when required but at least quarterly to (i) review program progress, (ii) approve sub-project selection, and (iii) act on any issues in need of attention at the state level.</p>
<ul style="list-style-type: none"> <li>• Water Resources Department</li> </ul>	<p>The Water Resources Department is one of the major department in the Government of Karnataka is headed by the Minister for major and medium irrigation.</p> <p>Irrigation projects are classified under two categories, as indicated below depending upon the extent of culturable command area (CCA). Major Irrigation Projects are those having CCA of 10,000 ha or more and medium subprojects, are of 2,000 to 10, 000 ha.</p> <p>The Water Resources Department consists of three major corporations-KBJNL, KNNL and CNNL and they have been established in 1994, 1998 and 2003 respectively. These three corporations are unique establishment of the state of Karnataka as these are envisages as Special Purpose Vehicle for speedy implementation of irrigation projects and to enable the Government to borrow funds from external sources. In addition to these three corporations, there are some projects which are being directly implemented by WRD.</p> <p>The main three divisions of WRD are the Water Resource Development Organization (which is responsible for investigation and planning of all major and medium irrigation projects in Karnataka and provides information to SGOK on interstate water disputes) the Command Area Development Authorities and the Nigams. These are described in more detail below.</p>
<ul style="list-style-type: none"> <li>• Executing agency</li> </ul>	<p>The state acting through Karnataka Neeravari Nigam Limited (KNNL) is the executing agency. This is one of three nigams (the other two are, Krishna Bhagya Jala Nigam Limited [KBJNL], the Cauvery Neeravari Nigam Limited [CNNL]. irrigation management corporations of the Water Resources Department (WRD). These are incorporated as state owned corporations.</p> <p>The Karnataka Neeravari Nigam Limited (KNNL) is responsible for major and medium irrigation in the Upper Tungabhadra Sub-Basin. It was incorporated in 1998 under the Companies Act 1956, as a wholly owned company of the Government of</p>

Project implementation organizations	Management Roles and Responsibilities
	<p>Karnataka to expedite the completion of the on-going irrigation projects in lower Krishna River Basin. The State government has transferred 10 projects to the KNNL for implementation, out of 28 major and medium irrigation projects in the Krishna River Basin.</p> <p>The KNNL will provide support for:</p> <ol style="list-style-type: none"> <li>(i) Collection of irrigation flow data, compilation, processing and hydrological designs;</li> <li>(ii) Planning and investigation of major and medium Irrigation projects;</li> <li>(iii) Construction and maintenance of new and existing major and medium irrigation projects;</li> <li>(iv) Monitoring and evaluation of the irrigation projects;</li> <li>(v) Resolving interstate water dispute problems;</li> <li>(vi) Command area development activities;</li> <li>(vii) Research, development and training activities; and</li> <li>(viii) Maintenance and monitoring of machinery and equipment.</li> </ol> <p>The focus of the nigams is on the main and secondary canals and command area development authority is responsible at tertiary system.</p> <p>KNNL will be responsible for all aspects of program execution including reviewing policy and overall coordination of all activities.</p> <p>The EA will be responsible (but not limited to) execution of the entire program, coordination of all activities particularly those requiring other government ministerial actions such as with the Planning Commission, Department of Economic Affairs of the Ministry of Finance, Ministry of Water Resources etc., disbursement support such as reimbursement of expenditures etc. will be routed through the EA. It will also be responsible for top-level coordination with ADB and other relevant development partners.</p>
<ul style="list-style-type: none"> <li>• Command Area Development Authority</li> </ul>	<p>Command Area Development Authorities (CADAs) are one of the divisions under the WRD. They were constituted in 1980 for providing tertiary irrigation management support for the major irrigation schemes in Karnataka. Within the K-8 sub-basin there are CADAs – the Bhadra Reservoir Project and the Tungabhadra Project CADA. These organisations focus on the systems of the tertiary canals and fields. The CADAs will provide support for:</p> <ol style="list-style-type: none"> <li>(i) All round development of areas (within the irrigation schemes) for agriculture;</li> <li>(ii) Construction of field irrigation channels;</li> <li>(iii) On-farm development;</li> <li>(iv) Adoption of warabandi (rostering) system for distribution of water;</li> <li>(v) Adoption and enforcement of suitable cropping pattern;</li> <li>(vi) Conjunctive use of surface and ground water;</li> <li>(vii) Reclamation of water-logged areas;</li> </ol>

Project implementation organizations	Management Roles and Responsibilities
	<p>(viii) Extension training and demonstration programs; and            (ix) Promotion of participatory irrigation management (PIM).</p> <p>The CADAs will provide tertiary and field system support for implementation of the program as part of the program implementation office (PIO).</p>
<ul style="list-style-type: none"> <li>• Program Management Unit</li> </ul>	<p>The program management unit (PMU) will be located within the KNNL and Managing Director, KNNL will be the PD. The PMU staff will be based in the PD office in Bangalore. The PD will operate under the overall guidance and with the support of the Principle Secretary WRD and the PSC. The PMU will comprise the following units: (i) monitoring and communication, (ii) budget and administration, and (iii) irrigation management. The PMU will be supported by program support consulting (PSC) services.</p> <p>The PMU will be overall responsible for implementing KISWRMIP. The PMU will have full authority to execute the program and to liaise with ADB. Specifically, the PMU will (i) coordinate with other agencies relevant to the program, (ii) prepare an overall implementation plan and annual program budget, (iii) review and approve project feasibility studies, (iv) monitor the activities of program implementation offices (PIO), (iv) maintain program financial records and accounts and ensure timely submission of required documents, (v) prepare periodic reports on implementation progress, (vi) establish and maintain a program management information system (MIS) database, and (vii) monitor overall program progress and assess social and environmental impact and program benefits. The PMU, working with the PSC, will overall monitor program execution with respect to agreed procedures and compliances.</p> <p>The Program related services that will be provided by the PMU include:</p> <ul style="list-style-type: none"> <li>(i) Ensuring that program activities are adequately coordinated, and budgets are placed in an appropriate and timely manner;</li> <li>(ii) Ensuring headquarter-level coordination with the activities of KNNL, CAD Directorate, AC-IWRM and any complementary government schemes that might be available from departments such as agriculture, horticulture, etc.;</li> <li>(iii) Assisting in identifying requisite staff and placing them in the PIO to ensure that a full complement of staff is maintained;</li> <li>(iv) Providing guidance and direction to the PIOs;</li> <li>(v) Conducting regular meetings with PIOs to monitor, coordinate, and guide their activities and to assist with any specific problems that may arise;</li> <li>(vi) Monitoring, through a purpose designed MIS database, the activities of the program. This will involve establishing the data input and retrieval systems and producing outputs for servicing the needs of the SGOK, GOI, ADB (and other relevant partners), program offices</li> </ul>

Project implementation organizations	Management Roles and Responsibilities
	<p>and other concerned stakeholders;</p> <p>(vii) Preparing media information (like leaflets, newsletters etc) for distribution among the WUCS and other interested people highlighting program related issues, experiences, learning and successes;</p> <p>(viii) Provide State-wide training for WUCS; and</p> <p>(ix) Supporting any other program management related needs of SGOK, GOI and ADB.</p>
	<p>The Program Director will undertake the following responsibilities:</p>
	<p>(i) oversee the overall implementation of the program and each of its tranches;</p> <p>(ii) liaise and correspond with ADB on all issues relating to the investment program and each project;</p> <p>(iii) coordinate with (a) national and state agencies to resolve any interdepartmental issues, and (b) other development agencies for implementation of non-physical activities;</p> <p>(iv) Procure consultancy services (including for AC-IWRM in the initial stages of program implementation);</p> <p>(v) Oversee and manage the procurement of services, works and goods by the respective implementing agencies;</p> <p>(vi) manage program support consultants, and contractors and suppliers with the support of zonal Chief Engineers and their field staff working under PIOs;</p> <p>(vii) monitor the adequate implementation of</p> <ul style="list-style-type: none"> <li>• Program compliance with ADB Safeguard Policy Statement (2009)</li> <li>• resettlement plans (RPs) – as may be required under tranche-2;</li> <li>• environment management plans (EMPs);</li> <li>• corrective action plans consistent with safeguard frameworks;</li> <li>• including,</li> <li>• the timely review and submission of semiannual safeguards monitoring reports to ADB</li> <li>• ensure that RPs and Initial Environmental Examinations (IEEs)/EMPs are updated by consultants during detailed design</li> <li>• confirm that EMPs are included in the bidding and contract documents of all civil works packages</li> <li>• the timely disclosure of safeguards documents to affected persons, in an accessible place and in a form and language understandable to them.</li> </ul> <p>(viii) maintain program accounts and submit consolidated quarterly reports;</p> <p>(ix) establish and maintain a program performance monitoring system (PPMS) at each subproject level, as well as a project and investment program levels;</p> <p>(x) monitor physical and non-physical investment activities under each project;</p>

Project implementation organizations	Management Roles and Responsibilities
	<ul style="list-style-type: none"> <li>(xi) obtain necessary data for establishing (baseline), maintaining and updating the PPMS;</li> <li>(xii) prepare and submit               <ul style="list-style-type: none"> <li>• Reports to the Program Steering Committees for consideration and approval;</li> <li>• Periodic progress reports on each investment activities;</li> <li>• Periodic Financing requests (through DEA) for ADB's consideration;</li> <li>• Audit reports; and</li> <li>• Reports mandated under the loan and project agreements;</li> </ul> </li> <li>(xiii) consolidate and submit disbursement application to ADB in a timely manner;</li> <li>(xiv) secure annual budgetary allocations for the Program; and</li> <li>(xv) disseminate information related to the investment program and each project to the public and media.</li> </ul>
<ul style="list-style-type: none"> <li>• Implementing agency</li> </ul>	<p>A PIO for Output 1 will be established within AC-IWRM. The Director of the AC-IWRM will also be the program implementation officer of the PIO. Administrative support would be provided by the AC-IWRM's administration unit comprising Registrar, Joint Registrar, Assistant Registrar, Section Officers and support staff. Required administrative staff will be sourced from WRD or KNNL. Consulting services will provide technical support to AC-IWRM, specifically the team leader of consulting services who will be the IWRM policy specialist. The deputy team leader will be the international river basin management specialist. The Director of AC-IWRM, will report to the AC-IWRM Director General and coordinate with PMU. It will be supported by a core team of 3 international consultants who will provide basic level of support throughout the activity.</p> <p>The AC-IWRM PIO will:</p> <ul style="list-style-type: none"> <li>(i) coordinate preparation of annual work and procurement plans, budgeting, accounting, procurement, annual reporting, monitoring and evaluation of AC-IWRM activities in coordination with the PMU;</li> <li>(ii) provide on-the job-training in implementing the project IWRM activities;</li> <li>(iii) organize and facilitate international and national study tours, training courses, work placements, academic fellowships and, a tri-annual international conferences;</li> <li>(iv) provide expert advice on IWRM;</li> <li>(v) undertake pilot activities in IWRM including water use efficiency, policy reviews, conjunctive use of surface, ground and rainwater etc. in accordance with the tasks identified in the roadmap;</li> <li>(vi) coordinate closely with PMU to ensure IWRM concepts are incorporated in design and implementation of field activities;</li> <li>(vii) be responsible for all activities relating to decision</li> </ul>

Project implementation organizations	Management Roles and Responsibilities
<ul style="list-style-type: none"> <li>Project Implementation Office</li> </ul>	<p>support systems (including hydrological measurements, establishment of database, use of data for planning purposes etc.);</p> <ul style="list-style-type: none"> <li>(viii) liaise with relevant state, national, regional and international agencies to share advice/knowledge /technical skills and expertise etc in IWRM;</li> <li>(ix) be responsible for implementation of the IWRM accreditation program in conjunction with UNECSO-IHE; and</li> <li>(x) receive and coordinate capacity building training with various agencies including state and national research agencies, international agencies such as eWater, NARBO etc.</li> </ul> <p>For field implementation (Output 2), each irrigation sub project to be modernized will have a dedicated PIO based within the existing irrigation sub division. The project implementation officer will be of the rank of the Chief Engineer of that irrigation zone reporting to the PD. The project implementation officer will be supported by the zonal Superintending and Executive Engineers.</p> <p>Each field PIO will have the full complement of required engineering staffing which will be dedicated for implementation of program activities. These will include:</p> <ul style="list-style-type: none"> <li>(i) Assistant Executive Engineers;</li> <li>(ii) Assistant Engineers; and</li> <li>(iii) Junior Engineers and other technical staff.</li> </ul> <p>The number of dedicated sub-divisions under the PIO will be determined by the extent of command area and quantum of works to be undertaken. The CADA staff deputed to the PIO will be an Assistant Engineer, Assistant Agriculture Officer and the Senior Inspector of Cooperative Society. The PIO will be provided with WUCS support service teams to maximize field outreach and supporting guidance from consulting services.<sup>1</sup></p> <p>Under the support and guidance of PMU provided through regular PMU-PIO meetings, the PIO will:</p> <ul style="list-style-type: none"> <li>(i) coordinate with the field staff of the concerned line departments,</li> <li>(ii) prepare an annual work plan for approval by PMU,</li> <li>(iii) implement the work plan, and</li> <li>(iv) establish reporting systems to provide information on physical and institutional progress and impacts.</li> </ul> <p>The PIO will work closely with WUCS and establish participatory decision making system through regular meetings at minor canal and on farm levels.</p>

<sup>1</sup> The organization arrangement of PMU and PIO may be adjusted in later tranches based on implementation experiences.



Project implementation organizations	Management Roles and Responsibilities
	<p>The specific tasks of the PIO will include:</p> <ul style="list-style-type: none"> <li>(i) provide inputs to project planning and design process;</li> <li>(ii) undertake WUCS strengthening and micro-planning for CAD and agriculture development;</li> <li>(iii) implement safeguards actions following the relevant plans;</li> <li>(iv) execute civil works;</li> <li>(v) coordinate for and/or implement support services for agriculture and livelihoods;</li> <li>(vi) support project operation, and maintenance in collaboration with WUCSs while ensuring the capacities and resources for the latter; and</li> <li>(vii) arrange training programs for the staff including service providers, and WUCS.</li> </ul> <p>The PIO will modernize irrigation systems to maximize irrigation reliability, efficiency and equity in service delivery. The PIO will strengthen WUCS in to independent self-sustaining entities capable of fulfilling their responsibilities including irrigation management, equitable distribution of water to farmers, operation and maintenance of minor canal system, collection of irrigation water charges and capable of interacting with service agencies including KNNL/CADA, Agriculture Department, Horticulture Department and other Departments to ensure that they receive necessary services. The goal is a significant improvement in irrigation service delivery through water use efficiency and increased in agricultural productivity.</p>
<ul style="list-style-type: none"> <li>• Water User Cooperative Societies</li> </ul>	<p>WUCS will be community based organizations which are already in existence or to be formed and registered under the Karnataka Cooperative Societies Act, 1959. The WUCS has voluntary membership given that it is a cooperative society and joining the WUCS. The WUCS be strengthened by the program to undertake their mandated role which is to:</p> <ul style="list-style-type: none"> <li>(i) assist KNNL and CADA in implementing irrigation and drainage works;</li> <li>(ii) implement or execute on farm development works;</li> <li>(iii) procure water in bulk on volumetric basis from the Irrigation Department or Krishna Jala Bhagya Nigama or Karnataka Neeravari Nigam and distribute it to the land holders in accordance with the principles laid down by the General Body for equitable distribution of water;</li> <li>(iv) prepare water budget and financial budget for each irrigation season;</li> <li>(v) operate and maintain canals situated within its jurisdiction;</li> <li>(vi) collect water charges and service charges from the land holders;</li> <li>(vii) resolve disputes that may arise among land holders; and</li> <li>(viii) educate and train land holders in the efficient and economical use of water and adoption of new technology as well as to implement necessary programs</li> </ul>

<b>Project implementation organizations</b>	<b>Management Roles and Responsibilities</b>
<ul style="list-style-type: none"> <li>Consulting Services</li> </ul>	<p>Consulting services will provide technical support for program implementation specifically in the context of IWRM which remains an innovative approach in the south Asia context. There will be three main consulting services packages: (i) PSC, (ii) IWRM, and (iii) monitoring and evaluation. The services will be recruited by PMU for PSC and monitoring and evaluation consultants and by PIO for IWRM for IWRM services. Each of the consulting services will work in coordination with the PD and/or program implementation officer responsible for the activity.</p>
<ul style="list-style-type: none"> <li>ADB</li> </ul>	<p>The SGOK requested a loan of \$150.0 million from ADB's ordinary capital resources (OCR) The first tranche of the MFF will have a twenty five year term, including a grace period of five years, an annual interest rate determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility, a commitment charge of 0.15% per year, the interest and other charges during construction to be capitalized in the loan, and such other terms and conditions set forth in the draft loan and project agreements. ADB will finance 67% of the program costs.</p> <p>ADB will be responsible for periodic review and supervision of Program implementation (through six monthly loan review missions and midterm and final review missions), financial disbursement and ensuring compliance with loan assurances including institutional arrangements as agreed and stated in the loan agreement.</p>

## SCHEDULE 4

### SELECTION CRITERIA AND APPROVAL PROCESS FOR SUBPROJECTS

#### A. Summary Subproject Selection Criteria and Approval Process

1. **Selection Criteria.** Under the KISWRMIP, the following criteria will apply in selecting subprojects intended for financing under the Investment Program.

- (i) The subprojects will be located within selected sub basins in Karnataka which will be identified by the Water Resources Department in consultation with AC-IWRM. The sub-basins will be suitably representative of the typical constraints faced in water resources management, like inter sector water demands between various users, have identifiable investment opportunities which meet state government and ADB financing criteria and any development interventions do not adversely impact on inter-state water agreements.
- (ii) They should be consistent with IWRM principles, which are that (i) Water is a finite and vulnerable resource, essential to sustain life, development and the environment; (ii) Water development and management should be based on a participatory approach, involving users, planners and policy makers at all levels; (iii) Women play a central part in the provision, management and safeguarding of water; (iv) Water has an economic value in all its competing uses and should be recognized as an economic good.
- (iii) There will be no duplication of activities on subprojects with other on-going programs which are financing the same activities in the same area.
- (iv) The subprojects will involve modernization of the existing irrigation and associated infrastructure. Subprojects will either be major (having a command area of over 10,000 hectares [ha]) or medium-sized (between 2,000 ha and 10,000 ha).
- (v) For each subproject, a participatory feasibility study (as further detailed below) and necessary due diligence will have been prepared, covering technical design, economic and financial viability, institutional arrangements, social assessments including social safeguards plans as applicable, environmental analysis, and an implementation plan.
- (vi) All necessary central and state government approvals will be in place.
- (vii) For individual subproject feasibility assessments, the following criteria will apply:
  - (a) technical feasibility, with no significant technical risks that would undermine efficacy, economic return, safety, or sustainability;
  - (b) reliable water availability and quality, with no significant negative impact on the other users of the same source or the ecosystem downstream;
  - (c) financial and economic viability with an economic internal rate of return of over 12% with robustness under sensitivity and risk analysis;
  - (d) social and environmental soundness with no significant negative impacts;
  - (e) consideration of gender mainstreaming principles;
  - (f) fulfillment of safeguards requirements (involuntary resettlement, indigenous peoples, and environment) of the Government and ADB, including the preparation of required safeguard planning documents prepared following the Environmental Assessment and Review

- (g) Framework and the Resettlement Framework, and efforts to minimize land acquisition and resettlement in the planning and design process; and a record of consultation and participation of the stakeholders prior to and during the feasibility study, with concurrence of the concerned water user cooperative societies (WUCS) on the basic design, including farmer contribution (in cash or in kind) equivalent to 10% of the contract value (as per the Government norms which is currently under practice), for minor facilities and command area development works like Field Irrigation Channels and Land Reclamation (in accordance with prevailing Government norms and practice), and operation and maintenance (O&M) of the minor facilities within the WUCS boundary.

2. **Procedures.** For the purpose of the first periodic financing request (PFR) under the investment program, an appraisal process has been undertaken for one medium irrigation subproject (Gondi).

3. For all irrigation subprojects to be proposed for inclusion in the subsequent PFRs, each subproject will be processed in accordance with the following procedures:

- (i) A consultative process will be adopted and fully documented demonstrating the involvement of stakeholders in the subproject identification and development process. This will include a communication plan for the subproject.
- (ii) Feasibility studies will be conducted by the executing agency (EA) including provision of subproject development cost estimates. The EA will also prepare an initial poverty and social assessment and fill out checklists for involuntary resettlement, indigenous peoples, and environment; and submit the same to ADB for review and categorization.
- (iii) Based on the categorization and the feasibility studies, the EA will prepare the draft appraisal reports for all subprojects to be considered under the respective PFRs following the selection criteria, together with any required attachments, i.e., draft resettlement plan (RP),<sup>1</sup> draft indigenous peoples development plan, and draft environmental assessment.<sup>2</sup>
- (iv) During the above process, the EA, with the assistance of the program support consultants, will also assess the progress and performance of the implementation of the preceding loans under the Investment Program, with necessary actions to enhance their effectiveness.
- (v) If a proposed subproject is not likely to satisfy the eligibility criteria and/or the agreed procedures, ADB will advise the EA to either (a) modify the subproject proposal in a manner that will make it eligible, or (b) reject the subproject. In the latter case, the EA may propose a replacement subproject under the loan.
- (vi) Upon completing the feasibility assessments of the concerned subprojects and progress and performance review of the preceding loans under the Investment Program, the EA will submit these documents with the PFR to ADB for approval. The EA will ensure that the necessary approvals of the Government of India or SGOK have been obtained prior to submission of the PFR.

<sup>1</sup> The EA will translate the RP into the local language and disclose it to the affected people and incorporate the results of the consultation. The final RP will also be disclosed on the ADB website and the website of the EA.

<sup>2</sup> If any of the subprojects are categorized as environmental category A or B sensitive in any subsequent loan, compliance is required with the 120-day advance disclosure rule. The summary environmental impact assessment or summary initial environmental examination must be circulated to the ADB Board of Directors and made available to the general public 120 days before the PFR is submitted to ADB.

## SCHEDULE 5

### SOCIAL DIMENSIONS AND SAFEGUARD REQUIREMENTS

1. India will cause the State to ensure that all the requirements prescribed in this Schedule, and the following social and safeguard frameworks and plans that have been prepared with respect to the Facility and the first tranche and of which ADB has been provided full copies, and which are deemed incorporated herein by reference, are complied with during the processing and implementation of the subprojects under the Facility.

- (i) environmental assessment and review framework (EARF), dated June 2013,
- (ii) resettlement framework (RF) dated June 2013,
- (iii) environmental management plan (EMP) dated June 2013 for the first tranche,
- (iv) gender action plan (GAP) dated June 2013.

2. The frameworks cover the Facility-specific information and requirements in accordance with ADB's safeguard policies: (i) the general anticipated impacts of the components or projects likely to be financed under the MFF on the environment, involuntary resettlement, and indigenous peoples; (ii) the safeguard criteria that are to be used in selecting components, projects; (iii) the requirements and procedure that will be followed for screening and categorization, impact assessments, development of management plans, public consultation and information disclosure (including the 120-day disclosure rule, if required), and monitoring and reporting; and (iv) the institutional arrangements (including budget and capacity requirements) and the client's and ADB's responsibilities and authorities for the preparation, review and clearance of safeguard documents.

3. Prior to the preparation of each PFR, the applicability and relevance of each safeguard framework for environmental assessment, involuntary resettlement, and indigenous people will be reviewed by PMU (KNNL) and updated to ensure relevance and consistency with applicable country legal frameworks and ADB's safeguard policies, as amended from time to time.

4. In all cases, for each new PFR preparation, the client will review ongoing projects to check on the status of compliance with the social and safeguard plans and frameworks, and submit the review reports to ADB, together with other required safeguard documents relevant to the projects included in the tranche being processes. In any case if major noncompliance is discovered in the course of the review of ongoing projects, a corrective action plan will be prepared and submitted to ADB.

## SCHEDULE 6

India shall ensure, and shall cause the State to ensure the following:

1. The State shall remain committed to the implementation of the Investment Program over the period 2014 to 2021 as envisaged in the Road Map.
2. In the event of any change in the Road Map, policy framework, Investment Program, or financing plan, India, the State and ADB will assess the potential impact on KISWRMIP and evaluate any change in scope, amendment, or continuation, as appropriate, of KISWRMIP.
3. The State shall ensure that the IWRM Steering Committee, which was established by the State in 2010 and chaired by Chief Secretary, and the Advanced Centre for IWRM (AC-IWRM), which was established in 2012 to study and advise on new IWRM based approaches to water resources management, be maintained and empowered throughout the Investment Program.
4. The State shall provide all counterpart funds, land and facilities required for timely and effective implementation of subprojects under the Investment Program, including, without limitation, any funds required (i) to meet any shortfall between cost and revenues for the operation and maintenance of the facilities created or rehabilitated under the subprojects; (ii) to mitigate unforeseen environmental and social impacts; and (iii) to meet additional costs arising from design changes, price escalation in construction costs and/or unforeseen circumstances.
5. The State, through KNNL and other agencies with responsibilities concerning water resources issues, shall employ sufficient staff for the duration of the Investment Program with adequate and relevant expertise in the field of project management, financial management, engineering, construction supervision, procurement, equipment inspection and testing, and environmental and social safeguards implementation; the State, KNNL and other implementing agencies shall ensure that all Subprojects are implemented in accordance with the detailed arrangements set forth in the FAM, and if applicable, any PAM that may be prepared for any portion of the Investment Program and Facility. Any subsequent change to the FAM (or PAM) shall become effective only after approval of such change by India and ADB.
6. All subprojects shall be selected and approved in accordance with the selection criteria and approval process set out in Schedule 4 of this FFA and all documents forming the basis for screening, selection and processing of subprojects are to be made available to ADB upon request and kept available for such purposes for a minimum period of five years from the date of the relevant project completion report.
7. The State shall remain committed to organizational reforms and capacity building for AC-IWRM, KNNL, CADAs, WUCSs and other water resources agencies, to implement IWRM and improve irrigation service delivery in selected river basins.
8. In the course of implementation of KISWRMIP, the State, through its agencies with responsibilities concerning water resources issues, shall be committed to undertaking appropriate studies, reviews and other actions, which will support, among other things: undergoing a water policy review; IWRM certification and maintaining accreditation thereafter; developing a water resources information system (WRIS) to support river basin planning, management and monitoring; preparing a river basin resource inventory and IWRM strategy,

and introducing river basin management arrangements for selected river basins; and preparing river basin plans and community-based land and water plans for selected basin.

9. The State shall ensure sustainability of the operation and maintenance (O&M) of irrigation distribution systems in selected river basins by, in part, supporting WUCSs in the preparation of (i) asset management plans, which includes a system for water charges and remittance of water rate, and (ii) modernization plans for improving their command area system and facilitating agricultural development within their respective jurisdictions.

10. The State shall ensure that staff responsible for O&M in KNNL, CADAs and WUCSs are trained by the consultants and contractors in the O&M of subproject facilities. In this regard the State, KNNL, CADAs and the WUCSs will ensure that an O&M plan will be developed for each subproject. The O&M plan will also assess additional human and financial resources required by each appropriate authority for smooth operation of subproject facilities.

11. India shall cause the State to ensure that it shall maintain the Subproject facilities and that proper technical supervision and adequate routine funds for this purpose are provided. The funds required for the O&M will be allocated annually and released on a timely basis. The State will prepare O&M management system throughout the Investment Program period.

12. The State shall ensure that Works contracts (i) follow all applicable labor laws of India and the State and that these further include provisions to the effect that contractors (a) carry out HIV/AIDS awareness programs for labor and disseminate information at worksites on risks of sexually transmitted diseases and HIV/AIDS as part of health and safety measures for those employed during construction; (b) follow and implement all statutory provisions on labor (including not employing or using children as labor, equal pay for equal work), health, safety, welfare, sanitation, and working conditions; and (c) provide equal employment opportunities for women and local poor and disadvantaged persons for construction purposes, provided that the requirements for efficiency are adequately met; and (ii) include clauses for termination in case of any breach of the stated provisions by the contractors.

13. The State shall announce the Investment Program and business opportunities associated with the Investment Program on its website. In addition, the website shall at least disclose the following information in relation to goods and services procured for the Investment Program: (i) the list of participating bidders; (ii) the name of the winning bidder; (iii) the amount of the contracts awarded; and (iv) the goods and services procured.

14. The State shall cause KNNL, other State-owned irrigation management corporations (or nigams), AC-IWRM, other State-authorized agencies, to conduct periodic inspections and random spot checks of contractors' activities related to fund withdrawals and settlements.

15. Towards smooth implementation of the Project, India will cause the State to ensure that grievance(s) of any from stakeholders relating to subproject implementation or use of funds are addressed effectively and efficiently.

16. The State shall ensure, and shall cause KNNL to ensure, that implementation of the subprojects under the Investment Program and Facility is in compliance with the undertakings and assurances concerning ADB's Safeguard Policy Statement (2009) (SPS), gender policy, labor standards, and prohibited investments as set out in Schedule 5 of this FFA, and the loan agreement for each tranche under the Investment Program.

17. India and the State shall ensure, and cause KNNL to ensure, that all Project and Project facilities under the Facility are assessed, designed, implemented, constructed, operated, maintained, and monitored in accordance with all applicable environmental laws, rules, and regulations of India, the State, ADB's SPS, the initial environmental examinations (IEEs), and the EARF and RF, as applicable.

18. India, State, KNNL and AC-IWRM shall comply with ADB's Anticorruption Policy (1998, as amended to date) and (i) shall ensure that the anticorruption provisions acceptable to ADB, India, the State and KNNL are included in all bidding documents and contracts financed by ADB in connection with the MFF and Projects, including provisions specifying the right of ADB to review and examine the records and accounts of the State, KNNL and AC-IWRM and all contractors, suppliers, consultants, and other service providers as they relate to the MFF and Projects, and as included in the FAM, (ii) shall allow and assist ADB's representatives to carry out random spot checks on the work in progress and utilization of funds for the MFF and Projects; (iii) acknowledge that ADB reserves the right to investigate directly or through its agents any alleged corrupt, fraudulent, collusive or coercive practice relating to the MFF and Projects; and (iv) cooperate with any such investigation and extend all necessary assistance for satisfactory completion of such investigation, **and** as included in the FAM.