

Facility Administration Manual

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India: Karnataka Integrated and Sustainable Water
Resources Management Investment Program

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Facility Administration Manual Purpose and Process

The facility administration manual (FAM) describes the essential administrative and management requirements to implement the multitranche financing facility (MFF) on time, within budget, and in accordance with Government and Asian Development Bank (ADB) policies and procedures. This FAM will also serve as project administration manual for Project 1. The FAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the FAM.

The Executing Agency will be the State acting through Karnataka Neeravari Nigam Limited (KNNL) and together with the implementing agencies—the Advanced Centre for Integrated Water Resources Management (AC-IWRM), Command Area Development Authorities (CADA), and water user cooperative societies (WUCS), it will be, wholly responsible for the implementation of ADB financed projects, as agreed jointly between the borrower and ADB, and in accordance with Government and ADB's policies and procedures. ADB staff is responsible to support implementation including compliance by KNNL, AC-IWRM, CADA, and WUCS of their obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.

At Loan Negotiations the borrower and ADB have agreed to the FAM and ensure consistency with the Loan Agreement. Such agreement is reflected in the minutes of the Loan Negotiations. In the event of any discrepancy or contradiction between the FAM and the Loan Agreement, the provisions of the Loan Agreement shall prevail.

After ADB Board approval of the project's report and recommendation of the President (RRP) changes in implementation arrangements are subject to agreement and approval pursuant to relevant Government and ADB administrative procedures (including the Project Administration Instructions) and upon such approval they will be subsequently incorporated in the FAM.

Abbreviations

AC-IWRM	–	Advanced Centre for Integrated Water Resources Management
ADB	–	Asian Development Bank
CADA	–	command area development authorities
CNNL	–	Cauvery Neeravari Nigam Limited
DMF	–	design and monitoring framework
EARF	–	environmental assessment and review framework
FAM	–	facility administration manual
FFA	–	framework financing agreement
GDP	–	gross domestic product
ha	–	hectare
ICB	–	international competitive bidding
IEE	–	initial environmental examination
IWRM	–	integrated water resources management
KISWRMIP	–	Karnataka Integrated and Sustainable Water Resources Management Investment Program
KNNL	–	Karnataka Neeravari Nigam Limited
LIBOR	–	London interbank offered rate
MFF	–	multitranche financing facility
MIS	–	management information system
NCB	–	national competitive bidding
NGOs	–	nongovernment organizations
PAI	–	project administration instructions
PD	–	Program Director
PIO	–	project implementation office
PIU	–	project implementation unit
PMU	–	program management unit
PSC	–	project support consultants
QBS	–	quality based selection
QCBS	–	quality- and cost based selection
RRP	–	report and recommendation of the President to the Board
RTGS	–	Real Time Gross Settlement
SGOK	–	State Government of Karnataka
SOE	–	statement of expenditure
SPS	–	Safeguard Policy Statement
SPRSS	–	summary poverty reduction and social strategy
TOR	–	terms of reference
TLBC	–	Tungabhadra Left Bank Canal
WRA	–	Water Resources Regulatory Agency
WRD	–	Water Resources Department
WUCS	–	water user cooperative societies

I. INVESTMENT PROGRAM DESCRIPTION

A. Background and Rationale

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).¹ 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-sector 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.

B. Program Description

1. Impact and Outcome

2. The impact of KISWRMIP is improved sustainable water security in selected river basins in Karnataka. The expected outcome will be IWRM successfully implemented in selected river basins in Karnataka.

2. Outputs

3. The KISWRMIP will support three outputs: (i) state and basin institutions strengthened for IWRM, (ii) irrigation system infrastructure and management modernized, and (iii) program management systems operational.

a. Output 1: State and basin institutions strengthened for IWRM

4. The output will strengthen institutional capacities of the Water Resources Department (WRD) and the Advanced Centre for IWRM (AC-IWRM)² to implement IWRM in selected river basins in Karnataka. This will include: (i) development and implementation of river basin plans to better manage water resources, (ii) capacity building and certification³ of the WRD (including its associated agencies like Karnataka Neeravari Nigam Limited [KNNL]) in IWRM with 30% of trainees being women, and (iii) improved water resources information systems. The activities to be undertaken are detailed in the IWRM road map in Appendix 1 (linked document) and the design and monitoring framework (DMF) for the program at Appendix 2.

5. The indicators for this output are: By 2021, (i) at least 3 river basin plans are developed and implemented, (ii) about 600 WRD staff (of which about 200 are women staff) are certified in IWRM, and (iii) State water resources information systems established. The main activities to be undertaken will include: (i) appointment of staff for AC-IWRM; (ii) Institutional/capacity assessment (WRD/KNNL/AC-IWRM) completed; (iii) staff are appointed for AC-IWRM; (iv) IWRM certification program in implementation; (v) river basin resources inventories prepared; (vi) State IWRM strategy endorsed by IWRM steering committee; (vii) water resources system

¹ 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).

² The State Government of Karnataka established the AC-IWRM through cabinet endorsement on 4 January 2012 and registration under the Societies Act on 10 Feb, 2012 with its rules and regulations.

³ The AC-IWRM will be accredited by UNESCO-IHE as an institute for professional training in IWRM.

established and under use for river basin planning; (viii) pilot projects completed for land and water management, remote sensing of water consumption, water use efficiency and water productivity; and river basin plans prepared and under implementation in 3 sub-basins.

6. The output will be implemented by the AC-IWRM which will be the implementing agency. Specialist support in IWRM will be provided by international and national consulting services which will be recruited as individual consultants to provide specific expertise in topics like river basin planning, basin modeling, communications etc.

b. Output 2: Irrigation system infrastructure and management modernized

7. This output will include: (i) modernization of irrigation infrastructure through three irrigation subprojects within the selected K-8 sub-basin (Gondi subproject under Project-1, and Vijaynagara and Tungabhadra left bank canal under Project-2); (ii) strengthening asset management and main system operation and maintenance (O&M); and (iii) capacity building of inclusive water user cooperative societies (WUCS), with women representation, for improved operation, maintenance and water management within their respective command area.

8. The indicators for the output are, by 2021: (i) 300 km of irrigation canal upgraded; (ii) irrigation services improved over 50,000 ha of land; (iii) asset management plans implemented for main system infrastructure on 3 selected systems; (iv) more than 82 of 110 WUCS operate and maintain transferred infrastructure, including fee collection; and (v) at least 30% of WUCS management boards are women to engage in the decision making process on water management. Activities to be undertaken will include: (i) the identification of locations and installation of telemetry equipment for hydrological measurements within the sub-basin; (ii) preparation of feasibility studies and detailed project reports for the identified irrigation subprojects; (iii) implementation of civil works at Gondi, Vijaynagara and Tungabhadra left bank canal irrigation systems; (iv) preparation of main system asset management and operation and maintenance plan; (v) capacity building for KNNL and WUCS in improved system management.

9. The output will be implemented by KNNL and project implementation offices (PIO) which will be established in the corresponding irrigation zone for each subproject. The command area development authority (CADA) will also be a part of the PIO providing specific technical support for WUCS strengthening. Specialist inputs will be provided by international and national program support consultancy (PSC) which will be recruited to provide specific expertise in irrigation systems, environmental management, social and gender development etc.

c. Output 3: Program management systems operational

10. This output will be delivery of the above program outputs on time and within budget. The main activities to be undertaken include (i) establishing a fully staffed project management unit (PMU) and project implementation offices (PIOs) with an appointed program director; (ii) procuring equipment; (iii) recruiting and monitoring PSCs within 6 months after commencement of project 1; (iv) operationalizing a program management information systems database within 3 months after commencement of project 1; (v) meeting annual disbursement projections; and (vi) conducting periodic program performance reviews.

11. Project management support (including office equipment and operational costs) will be provided to the PMU and one of the implementing agencies (AC-IWRM), and PIO will be located according to the individual irrigation subprojects to be modernized. The PMU will be located

within KNNL and Managing Director, KNNL will be the program director (PD). The PMU staff will be based in the PD office in Bangalore. 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 PSC services. Staffing requirements for PMU are presented below:

Table 1. Program Management Staffing Requirements

Staff Position	Input Person-Months (p-m)
Project Director	84.0
Monitoring and Communication Cell	
Program Officer (management and geographic information systems)	84.0
Communication Expert	84.0
Budget and Administration Cell	
Program Officer Procurement	84.0
Program Officer Budget and Accounts	84.0
Irrigation Management Cell	
Executive Engineer, Irrigation	84.0
Assistant Executive Engineer, Irrigation	84.0
Assistant Engineer, Irrigation	84.0
Total	672.0

C. Special Features

12. The KISWRMIP will introduce an IWRM approach to effective irrigation service delivery to enhance efficiency, productivity, and sustainability in water use by implementing key policy principles, furthering reforms for improved sector governance, and by incorporating the following lessons:

Table 2: Value Addition to Program Outputs

IWRM	<p>The KISWRMIP will implement the key principles of the State's "Vision for Development—2020" (State Planning Board, 2009) emphasizes: (i) greater visibility of agriculture and allied activities to increase rural incomes, and (ii) achieving a sustainable and orderly process of industrialization and urbanization for poverty reduction and sustained human development. Also the State's Water Policy (2002), the National Water Mission, 2011 (Ministry of Water Resources), National Water Policy, 2012 (Ministry of Water Resources) and the 12th Five Year Plan 2012-2017 (Planning Commission). This will be in the context of making river basin management fully operational to ensure integrated water resource management helping to conserve water, minimize wastage and ensure more equitable distribution both across and within States, and (b) Integrated water policies to cope with variability in rainfall and river flow at the basin level with associated policy enhancements owned by the State.</p> <p>Institutional strengthening: The State has established the Advanced Centre for IWRM (AC-IWRM) which will be a think tank to provide best practice, knowledge and guidance on water resources management at the state level. The Program will continue to support AC-IWRM. A sub basin level institution will be established for long term exemplary river basin management. The AC-IWRM will be accredited by UNESCO-IHE as regional institute for professional training in IWRM.</p>
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	International best practice: The Program builds on regional and global best practices in IWRM. Specifically focusing on short and medium terms goals in the context of IWRM road map implementation specifically, monitoring and evaluation, sub basin planning, performance benchmarking and policy analysis for improving resource management.
	Sub-basin planning: The program will undertake a sub basin planning approach considering modeling of the overall water resources system rather than piecemeal and irrigation centric approach. Other water users, upstream reservoir operation and existing availability will be incorporated in the planning and design process. This is a more advanced approach to conventional irrigation system design where the sub basin interconnectivity of water uses and water users are not incorporated in design process.
	Decision support systems: comprehensive measurement (using state of the art technology and automated systems) and system benchmarking will be established to determine baseline situation and also for real time decision making on system operation.
Irrigation Service delivery Improvement	Components are designed consistently with step-by-step implementation procedures to establish participatory irrigation management (PIM)-based productive agriculture, incorporating best practices collected through national and international studies. The program has a specific focus on extending field channel networks and promoting conjunctive use of groundwater, as essential elements for improving water-use efficiency, crop intensification, and diversification. It will strengthen WUCS to progressively take on O&M and implementation roles, with their capacity developed to facilitate links in input delivery, extension, and product marketing to achieve productive agriculture.
	Piped distribution network: proposed to provide buried pipe network at the tertiary system to avoid losses as observed in open channels and prevent tampering with irrigation allocations to tertiary units. This has not been installed in the system to date.
	Micro-irrigation systems: providing high efficiency irrigation and improving water use efficiency. This will be introduced on all irrigation subprojects to increase productivity through less water. Where possible and if sufficient hydraulic head available, then can be gravity fed systems.
	On and offline storages: where feasible these will be provided along the main canal and other suitable locations within the irrigation system. The aim will be to improve water storage during surplus periods and provide during low flow period.

D. Implementation Duration

13. The MFF will be implemented over a 7-year period, with two projects, subject to the government's submission of related periodic financing requests, execution of related loan and

project agreements for each project, and fulfillment of terms and conditions and undertakings set forth in the framework financing agreement (FFA). Project-1 will be implemented between 2014 and 2018 and will be of 4 years in duration. It is expected that Project-2 is expected to be approved in 2015 for duration of 6 years until September 2021 when the implementation of the MFF will be completed.

E. Project–1

14. On the basis of the FFA for KISWRMIP, the Government of India submitted the Periodic Financing Request (PFR) for Project–1 on 28 July 2014. Project–1 of KISWRMIP will support the initial progress in introducing IWRM by (i) commencing the strengthening of relevant institutions, specifically the AC-IWRM, for advancing policy review, river basin planning, water resources information systems establishment, and (ii) modernization of irrigation system infrastructure and management on one irrigation subproject (which was appraised prior to the PFR submission), including WUCS strengthening. The expected outcome will be strengthened institutions for integrated river basin management. Project 1 will have outputs as described below:

- (i) Output 1: State and basin institutions strengthened for IWRM – the output will initiate IWRM activities including operationalizing the AC-IWRM (ensuring it is fully staffed); commencing the IWRM certification process which will be undertaken by an accredited agency UNESCO-IHE, and preparation of the state IWRM strategy which will be approved by the state IWRM steering committee.

UNESCO-IHE has been working closely with WRD to develop an IWRM accreditation program using ADB grant financing. The two agencies will co-develop a framework for a proficiency certification program to be implemented by AC-IWRM. This will be for different levels of IWRM competence development for professionals in engineering and other related sectors. The aim is for AC-IWRM to develop in to a sub-regional accredited institute to provide certification in IWRM. UNESCO-IHE will also be responsible for periodic review and renewal of the accreditation status. All financing for UNESCO-IHE support in this process will be through grant financing from ADB.

- (ii) Output 2: Irrigation system infrastructure and management modernized – the output will commence irrigation modernization activities at Gondi irrigation subproject, specifically the implementation of civil works for canal lining, distribution network and command area development. Also, there will be capacity building of 9 WUCS and increasing women representation in the WUCS management boards.
- (iii) Output 3: Project and management systems operational – the output will establish operational requirements for project implementation and management. This will specifically include the establishment of PMU and PIO for Gondi irrigation subproject, preparation of annual work plans and activity schedules, and commencement of contract awards and disbursements.

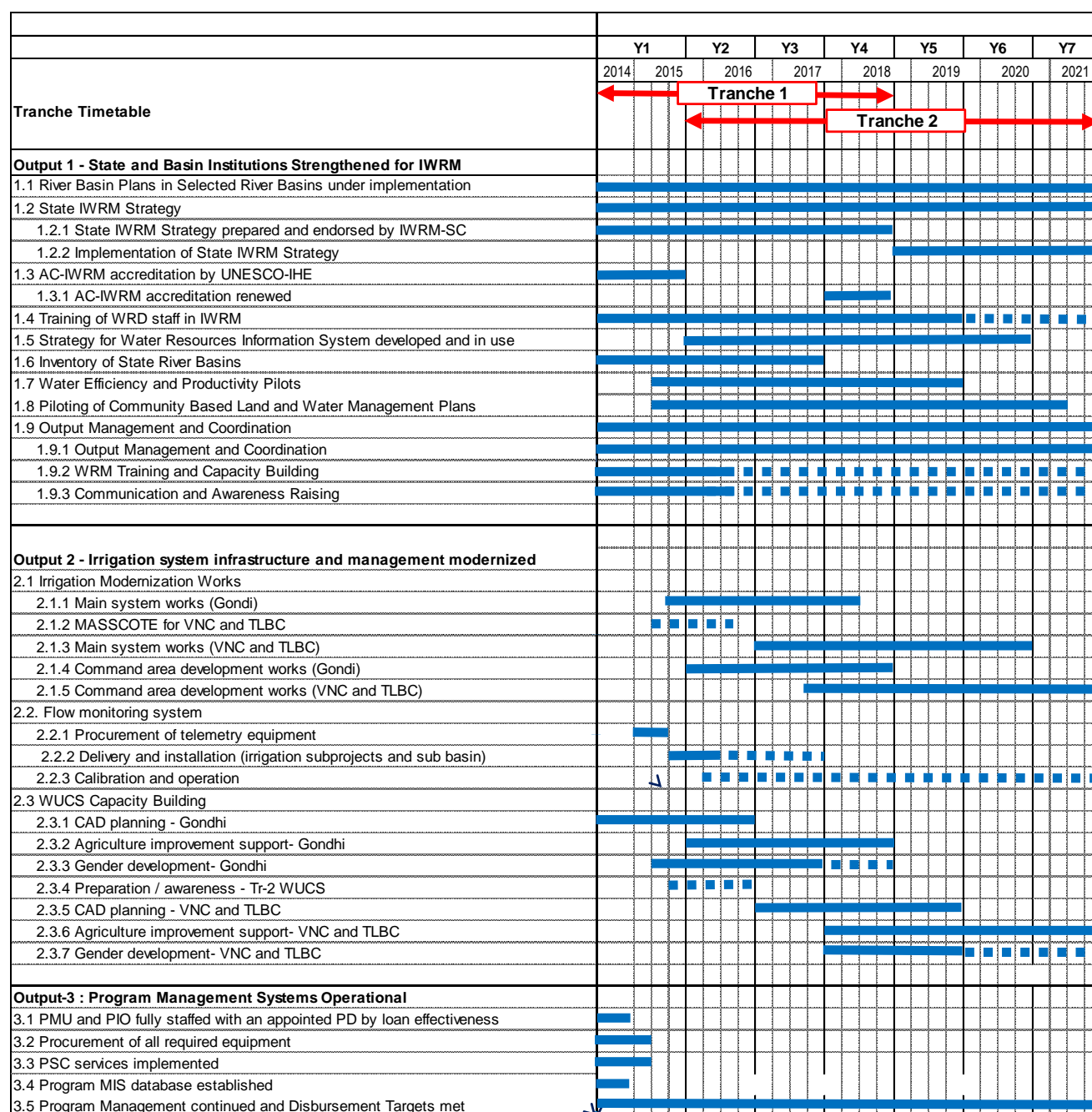
15. Its description is provided as Appendix 3, whereas the design and monitoring framework for Project 1 is in Appendix 4.

II. IMPLEMENTATION PLANS

A. Project Readiness Activities

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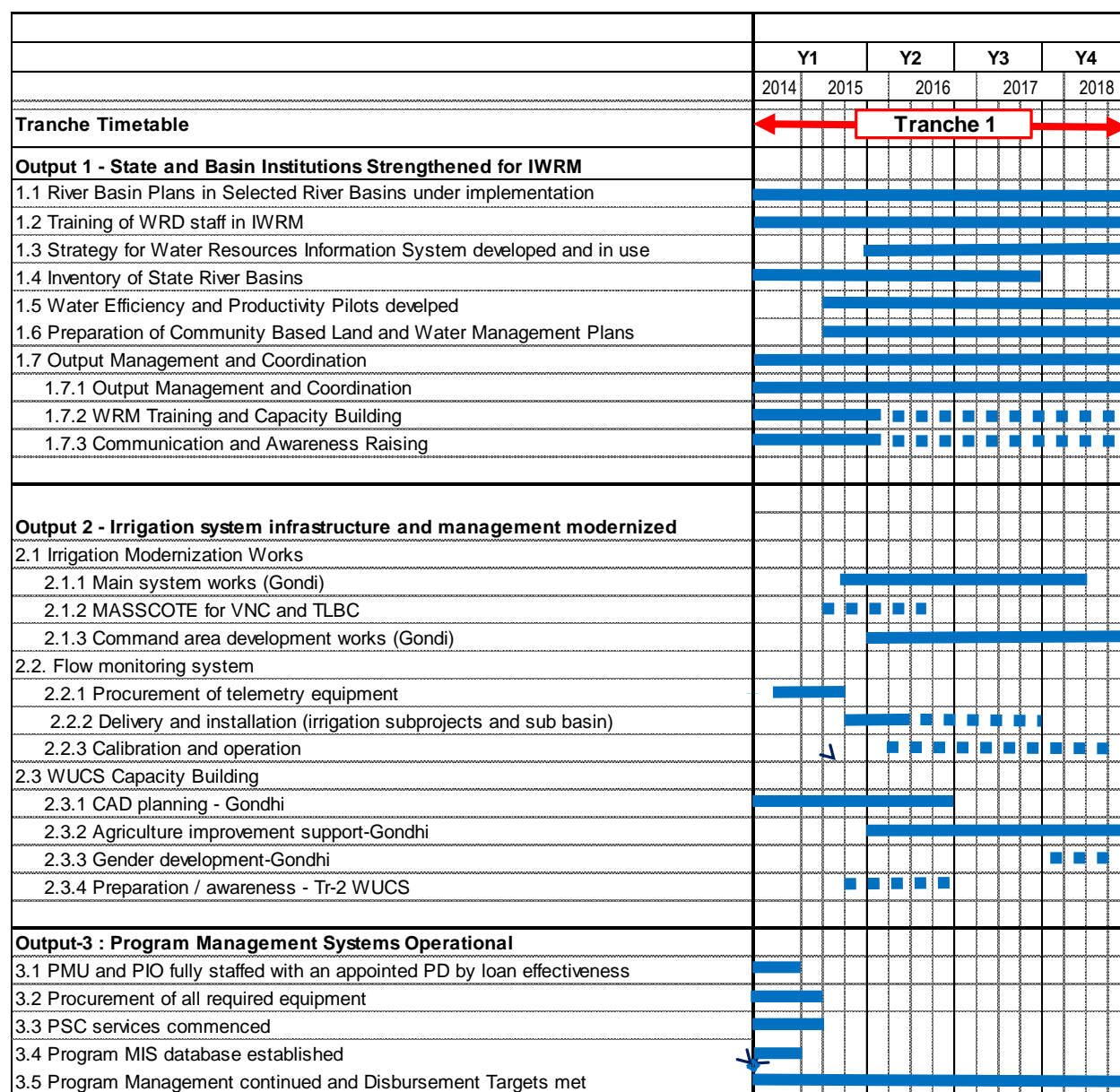
B. Overall Program Implementation Plan (2014–2021)



Legend

- Full-time activity under project
- Intermittent activity under project

C. Implementation Plan for Project-1 (2014–2018)



Legend

- Full-time activity under project
- Intermittent activity under project

III. PROJECT MANAGEMENT ARRANGEMENTS

A. Project Implementation Organizations – Roles and Responsibilities

Organizations	Management Roles and Responsibilities
<ul style="list-style-type: none"> State IWRM steering committee 	<p>State IWRM steering committee (IWRM SC) has already been constituted (through State Government of Karnataka (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"> (i) coordinate activities, provide guidance and resolve issues for KISWRMIP; (ii) provide policy direction on matters relating to IWRM in Karnataka; (iii) provide strategic guidance and oversee the coordination IWRM programs in the State; and (iv) ensure coordination on water resource management among State agencies. <p>The IWRM Steering Committee, constituted vide Government Order dated 19-07-2010, will comprise:</p> <ul style="list-style-type: none"> (i) Chief Secretary of the State (chair), (ii) Principal Secretary, Water Resources Department (member secretary), (iii) Principal Secretary, Urban Development Department, (iv) Principal Secretary, Rural Development Department, (v) Principal Secretary, Agriculture Department, (vi) Principal Secretary, Commerce and Industries Department, (vii) Principal Secretary, Forest, Ecology and Environment Department, (viii) Secretary, Minor Irrigation, (ix) Managing Director, KUIDFC, (x) Managing Director, Karnataka Urban Water Supply and Drainage Board, and (xi) Chairman, Bangalore Water Supply and Sanitation Board. <p>The IWRM SC will meet as required however, at least twice in a year.</p>
<ul style="list-style-type: none"> Program Coordination Committee 	<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"> (i) program oversight, (ii) policy guidance, and (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. <p>The members of the PCC will include:</p>

Organizations	Management Roles and Responsibilities
	<ul style="list-style-type: none"> (i) Secretaries WRD and Minor Irrigation Department, (ii) Managing Directors of Nigams (KNNL, KBJNL, CNNL)⁴, (iii) Director AC-IWRM, (iv) Director of Water and Land Management Institute, (v) Director Karnataka Engineering Research Stations, (vi) Chief Engineers of Water Resources Development Organization and Hydrology and Central Mechanical Organization, (vii) Principal of the Engineering Staff College, (viii) zonal Chief Engineers where the projects under the program are under implementation; Chief Engineer Command Areas Development Authority (CADA) Directorate, and (ix) relevant CADAs In-charge officers and representative of Agriculture Department.
	<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"> • Water Resources Department (WRD) 	<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 WRD 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 (CADA) and the Nigams. These are described in more detail below.</p>
<ul style="list-style-type: none"> • Executing agency 	<p>The State acting through Karnataka Neeravari Nigam Limited (KNNL) is the executing agency for Project 1.</p>

⁴ Karnataka Neeravari Nigam Limited, Krishna Bhagya Jala Nigam Limited, and Cauvery Neeravari Nigam Limited.

Organizations	Management Roles and Responsibilities
	<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 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. The other nigams – KBJNL and CNNL – may be executing or implementing agencies for Project 2 and/or subsequent Projects.</p> <p>The KNNL and/or other nigams (if applicable) will provide support for:</p> <ul style="list-style-type: none"> (i) Collection of irrigation flow data, compilation, processing and hydrological designs; (ii) Planning and investigation of major and medium Irrigation projects; (iii) Construction and maintenance of new and existing major and medium irrigation projects; (iv) Monitoring and evaluation of the irrigation projects; (v) Resolving interstate water dispute problems; (vi) Command area development activities; (vii) Research, development and training activities; and (viii) Maintenance and monitoring of machinery and equipment. <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) for execution of the entire program, coordination of all activities particularly those requiring other government ministerial actions such as 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. It will also be responsible for top-level coordination with ADB and other relevant development partners.</p>
<ul style="list-style-type: none"> • Program Management Unit 	<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</p>

Organizations	Management Roles and Responsibilities
	<p>program and to liaise with ADB. Specifically, the PMU will</p> <ul style="list-style-type: none"> (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>The Program related services that will be provided by the PMU include:</p> <ul style="list-style-type: none"> (i) Ensuring that program activities are adequately coordinated, and budgets are placed in an appropriate and timely manner; (ii) Ensuring headquarter-level coordination with the activities of KNNL, CADA, AC-IWRM and any complementary government schemes that might be available from departments such as agriculture, horticulture, etc.; (iii) Assisting in identifying requisite staff and placing them in the PIO to ensure that a full complement of staff is maintained; (iv) Providing guidance and direction to the PIOs; (v) Conducting regular meetings with PIOs to monitor, coordinate, and guide their activities and to assist with any specific problems that may arise; (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 and other concerned stakeholders; (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; (viii) Provide State-wide training for WUCS; and (ix) Supporting any other program management related needs of SGOK, GOI and ADB. <p>The Program Director will undertake the following responsibilities:</p> <ul style="list-style-type: none"> (i) oversee the overall implementation of the program and each of its Projects; (ii) liaise and correspond with ADB on all issues relating to the investment program and each project; (iii) coordinate with (a) national and state agencies to resolve any interdepartmental issues, and (b) other development agencies for implementation of non-

Organizations	Management Roles and Responsibilities
	physical activities;
(iv)	Procure consultancy services (including for AC-IWRM in the initial stages of program implementation);
(v)	Oversee and manage the procurement of services, works and goods by the respective implementing agencies;
(vi)	manage program support consultants, and contractors and suppliers with the support of zonal Chief Engineers and their field staff working under PIOs;
(vii)	monitor the adequate implementation of <ul style="list-style-type: none"> • Program compliance with ADB Safeguard Policy Statement (2009) • resettlement plans (RPs) – as may be required for Project-2; • environment management plans (EMPs); • corrective action plans consistent with safeguard frameworks; • including, • the timely review and submission of semiannual safeguards monitoring reports to ADB • ensure that RPs and Initial Environmental Examinations (IEEs)/EMPs are updated by consultants during detailed design • confirm that EMPs are included in the bidding and contract documents of all civil works packages • the timely disclosure of safeguards documents to affected persons, in an accessible place and in a form and language understandable to them.
(viii)	maintain program accounts and submit consolidated quarterly reports;
(ix)	establish and maintain a program performance monitoring system (PPMS) at each subproject level, as well as a project and investment program levels;
(x)	monitor physical and non-physical investment activities under each project;
(xi)	obtain necessary data for establishing (baseline), maintaining and updating the PPMS;
(xii)	prepare and submit <ul style="list-style-type: none"> • Reports to the Program Steering Committees for consideration and approval; • Periodic progress reports on each investment activities; • Periodic Financing requests (through DEA) for ADB's consideration; • Audit reports; and • Reports mandated under the loan and project agreements;
(xiii)	consolidate and submit disbursement application to ADB in a timely manner;
(xiv)	secure annual budgetary allocations for the Program; and
(xv)	disseminate information related to the investment program and each project to the public and media.

Organizations	Management Roles and Responsibilities
<ul style="list-style-type: none"> AC-IWRM (Implementing agency) 	<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 (or other nigram, as applicable). 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"> (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; (ii) provide on-the job-training in implementing the project IWRM activities; (iii) organize and facilitate international and national study tours, training courses, work placements, academic fellowships and, a tri-annual international conferences; (iv) provide expert advice on IWRM; (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; (vi) coordinate closely with PMU to ensure IWRM concepts are incorporated in design and implementation of field activities; (vii) be responsible for all activities relating to decision support systems (including hydrological measurements, establishment of database, use of data for planning purposes etc.); (viii) liaise with relevant state, national, regional and international agencies to share advice/knowledge /technical skills and expertise etc. in IWRM; (ix) be responsible for implementation of the IWRM accreditation program in conjunction with UNECSO-IHE; and (x) receive and coordinate capacity building training with various agencies including state and national research agencies, international agencies such as eWater, NARBO etc.
<ul style="list-style-type: none"> Command Area Development Authority 	<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</p>

Organizations	Management Roles and Responsibilities
	<p>are 2 CADAs operating these are for the Bhadra Reservoir Project and the Tungabhadra Project CADA. The CADAs will provide support for:</p> <ul style="list-style-type: none"> (i) All round development of areas (within the irrigation schemes) for agriculture; (ii) Construction of field irrigation channels; (iii) On-farm development; (iv) Adoption of warabandi (rostering) system for distribution of water; (v) Adoption and enforcement of suitable cropping pattern; (vi) Conjunctive use of surface and ground water; (vii) Reclamation of water-logged areas; (viii) Extension training and demonstration programs; and (ix) Promotion of participatory irrigation management (PIM). <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"> • Water User Cooperative Societies 	<p>WUCS are 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. The WUCS will be strengthened by the program to undertake their mandated role which is to:</p> <ul style="list-style-type: none"> (i) assist KNNL (other nigram, as applicable) and CADA in implementing irrigation and drainage works; (ii) implement or execute on farm development works; (iii) procure water in bulk on volumetric basis from the Water Resources 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; (iv) prepare water budget and financial budget for each irrigation season; (v) operate and maintain canals situated within its jurisdiction; (vi) collect water charges and service charges from the land holders; (vii) resolve disputes that may arise among land holders; and (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
<ul style="list-style-type: none"> • Project Implementation Office 	<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</p>

Organizations	Management Roles and Responsibilities
	<p>engineering staffing which will be dedicated for implementation of program activities. These will include:</p> <ul style="list-style-type: none"> (i) Assistant Executive Engineers; (ii) Assistant Engineers; and (iii) Junior Engineers and other technical staff. <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.⁵</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"> (i) coordinate with the field staff of the concerned line departments, (ii) prepare an annual work plan for approval by PMU, (iii) implement the work plan, and (iv) establish reporting systems to provide information on physical and institutional progress and impacts. <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> <p>The specific tasks of the PIO will include:</p> <ul style="list-style-type: none"> (i) provide inputs to project planning and design process; (ii) undertake WUCS strengthening and micro-planning for CAD and agriculture development; (iii) implement safeguards actions following the relevant plans; (iv) execute civil works; (v) coordinate for and/or implement support services for agriculture and livelihoods; (vi) support project operation, and maintenance in collaboration with WUCSs while ensuring the capacities and resources for the latter; and (vii) arrange training programs for the staff including service providers, and WUCS. <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</p>

⁵ The organization arrangement of PMU and PIO may be adjusted in later tranches based on implementation experiences.

Organizations	Management Roles and Responsibilities
	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.
<ul style="list-style-type: none"> Consulting Services 	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 components: (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.
<ul style="list-style-type: none"> ADB 	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.

B. Key Persons Involved in Implementation

Executing Agency

Karnataka Neeravari Nigam Limited

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ADB

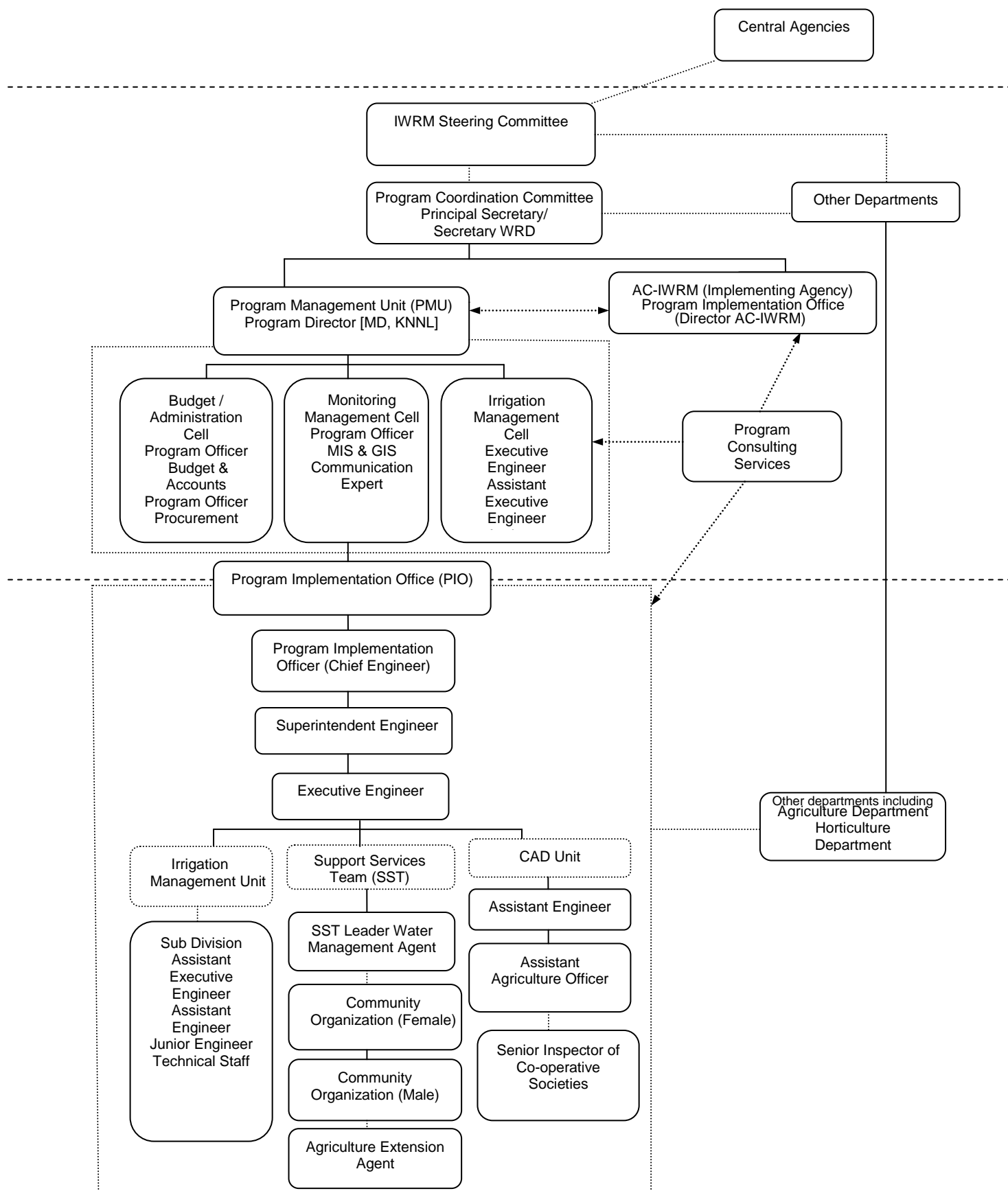
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Mission Leader

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C. Program Organizational Structure



D. Implementation Procedures and Arrangements

16. **Subproject Selection Criteria and Preparation.** All subprojects to be included under the Program will meet the selection criteria shown in Appendix 5, including: (i) water availability; (ii) technical, social, institutional and economic feasibility; (iii) insignificant social and environmental impacts; (iv) compliance with safeguards requirements; (v) endorsement by WUCS including the set beneficiary contribution requirements; and (vi) proposal clearance by the Government as applicable. For Project-1, the Gondi subproject was studied under the PPTA, and appraised by WRD, KNNL and ADB. For subsequent Projects, KNNL has already prepared the detailed project reports (for Vijayanagara [VNC] and Tungabhadra left bank canal [TLBC]) and the socio economic baseline survey for TLBC was completed during the baselines survey.

17. For each subproject a diagnostic analysis will be undertaken using an approach like the Mapping System and Services for Canal Operation Techniques, developed by the Food and Agriculture Organization.⁶ This will be undertaken in advance of the feasibility study and detailed project report preparation to ensure operational/institutional and technical aspects of system management have been adequately addressed.

18. **Subproject Implementation Procedures.** Implementation procedures for individual subprojects are shown in Appendix 6. In principle, substantial WUCS strengthening will be pursued upfront to achieve the specific performance targets set, following which infrastructure modernization will commence.

19. **Participatory Project Management and Governance Arrangements.** In implementing individual subprojects, the KISWRMIP will involve WUCS in key decision making stages at subproject and micro level planning, implementation, and O&M. Specific works based on such decision will be implemented by the responsible organizations, and monitored by the WUCS. This will be supported by (i) the project-specific MIS and quality control system that ensures due recording and reporting at PIO on institutional, physical, financial and other progress against the set targets specified in the subproject plan; and (ii) regular PMU–PIO review meetings.

20. **WUCS Capacity Building.** The program will build capacity of all the WUCS in the State through two levels of intervention. At the subproject level (Gondi, Vijayanagara and TLBC), an intensive intervention program is proposed to enhance water use efficiency and improve livelihoods of the farmers through capacity building of the WUCS. At the State level, capacity building of all WUCS will also be introduced though less intense than the program specific subprojects. The main aspects to be covered to improve irrigation management will be: (i) community mobilization to enhance WUCS membership; (ii) enhancement of water use efficiency; (iii) crop intensification and diversification and (iv) regular O&M through water charges collection and remittance of water rates.

21. **Beneficiary Contribution Arrangements.** The KISWRMIP will involve beneficiary contribution in minor irrigation facilities. Specifically, WUCS beneficiaries of major and medium-scale schemes will be requested to deposit 10% of the cost of minor canals as an O&M reserve fund for the concerned WUCS. Beneficiaries will also be requested to contribute 10% of the cost of CAD works. These will be reflected in the concerned subproject plan (for major and medium schemes).

⁶ This is a step-wise procedure for auditing performance of irrigation management, analyzing and evaluating the different elements of an irrigation system in order to develop a modernization plan.

22. **Sustainable O&M of Existing Irrigation Schemes.** The KISWRMIP will place significant emphasis to sustain operation and maintenance (O&M) of existing irrigation schemes. The specific measures are divided into (i) state-wide measures and (ii) KISWRMIP subproject-specific measures.

- (i) At the state level, KNNL (through the subproject specific CADAs) will (a) set up scheme-wise management information system (MIS) for O&M monitoring and planning, (b) establish a mechanism of monitoring the WUCS-wise performance of water rate collection, (c) put into operation participatory decision making for fund allocation and utilization of O&M in each scheme; and (d) introduce needs- and performance-based fund allocation system (for grant-in-aid followed by maintenance fund) by establishing direct linkage between the water rate submitted and funds allocated.
- (ii) At the subproject level, PMU and PIOs will put into operation the specific arrangements as stipulated above, as component for O&M sustainability, including the benchmarking of each subproject and develop indicators to assess the improvement in the project performance.

IV. COSTS AND FINANCING

A. Investment Cost and Financing Plan of the KISWRMIP

23. The investment program is estimated to cost \$225 million inclusive of taxes duties, interest and other charges on the loan during construction. Project-1 is estimated to cost \$48 million. The indicative cost and financing plan for the Program and Project 1 (based on MFF amount of \$150 million) are shown in Tables 3 and 4.

Table 3: Investment Program
(\$ million)

Item	Amount ^a
A. Base Cost^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
Subtotal (A)	200
B. Contingencies^c	20
C. Financing Charges During Implementation^d	5
Total (A+B+C)	225

IWRM = integrated water resources management.

^a Includes taxes and duties of \$9 million to be financed from government resources.

^b In February-2014 prices.

^c 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 for FY2012–FY2016) as of November 2013; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

^d Includes interest and commitment charges. Interest during construction for ADB loans has been computed at the 5-year forward London interbank offered rate plus a spread of 0.5000%. Commitment charges for an ADB loan are 0.15% per year to be charged on the undisbursed loan amount.

Source: Asian Development Bank estimates.

24. 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 the framework financing agreement (FFA).⁷ 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 investment program.

25. The State has submitted the first periodic financing request (PFR)⁸ in line with the draft FFA. The cost of Project-1 subprojects is estimated at \$48.0 million equivalent, including taxes and duties of \$1.7 million equivalent and interest and commitment fee of \$1.1 million to be financed by the government.

26. For Project-1, the government has requested a loan of \$31.0 million from ADB ordinary capital resources, with \$16.6 million to be financed by the government and \$0.4 million by beneficiaries which will also form part of the state share of financing.⁹ The loan will have a 25-

⁷ Framework Financing Agreement (accessible from the list of linked documents in Appendix 2).

⁸ Periodic Financing Request (accessible from the list of linked documents in Appendix 2).

⁹ Beneficiaries are WUCS, who will provide upfront contributions for implementations of 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.

year term, including a grace period of 5 years, an annual interest rate determined in accordance with ADB's London interbank offered rate (LIBOR)-based lending facility¹⁰, a commitment charge of 0.15% per year, and such other terms and conditions set forth in the draft loan and project agreements. The first tranche will be implemented in 4 years between 2014 and 2018. It is expected that the second tranche will commence in 2015 for 6 years until September 2021. The financing plan is in Table 4.

Table 4: Financing Plan

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

Source: Asian Development Bank estimates (January 2014).

27. Detailed cost estimates by expenditure category and detailed cost estimates by financier for the entire program are presented in sections B and D below.

28. The cost estimates for Project-1 is in Table 5.

Table 5: Financing Plan (Project-1)
(\$ million)

Project/ component	Counterpart	ADB	Beneficiaries	Total
1 : State and basin institutions strengthened for IWRM	6.4	6.5	0.0	12.9
2 : Irrigation system infrastructure and management modernized	7.0	21.2	0.4	28.6
3 : Program and management systems operational	2.0	3.3	0.0	5.3
Interest and Commitment Fee	1.2			1.2
Total	16.6	31.0	0.4	48.0

Source: Asian Development Bank estimates.

¹⁰ The interest includes a maturity premium of 10 basis points. This is based on the above loan terms and the government's choice of repayment option and dates.

B. Detailed Cost Estimates by Expenditure Category for MFF

	Foreign	(US\$ '000) Local	Total	% Foreign Exchange	% Total Base Costs
A. Investment Costs					
1. Civil Works	-	152,776	152,776	-	77
2. Equipment and Supplies	78	233	311	25	-
3. Consultancy Services & Training					
a. Training	-	2,662	2,662	-	1
b. Support Services Team for WUCs	-	8,559	8,559	-	4
c. Surveys and Studies					
Effects Monitoring	-	919	919	-	-
Survey, Design and Studies	4,465	5,438	9,902	45	5
Subtotal c. Surveys and Studies	4,465	6,357	10,821	41	5
d. Support Consultants					
International Consultants	2,204	-	2,204	100	1
National Consultants	-	3,088	3,088	-	2
Consultancy Support	85	701	786	11	-
Subtotal d. Support Consultants	2,289	3,789	6,087	38	3
Subtotal 3. Consultancy Services & Training	6,753	21,366	28,120	24	14
4. Staff Costs	-	10,539	10,539	-	5
5. Duties & Taxes	-	7,905	7,905	-	4
Total BASELINE COSTS	6,831	192,819	199,650	3	100
Physical Contingencies	111	8,170	8,281	1	4
Price Contingencies	469	11,681	12,151	4	6
Total PROJECT COSTS	7,411	212,670	220,082	3	110
Interest During Implementation	-	4,374	4,374	-	2
Commitment Charges	-	544	544	-	-
Total Costs to be Financed	7,411	217,589	225,000	3	113

C. Detailed Cost Estimates by Expenditure Category for Project 1 (US\$ '000)

	Foreign	Local	Total	% Foreign	% Base
I. Investment Costs					
A. Civil Works	-	25,128	25,128	-	57
B. Equipment and Supplies	41	165	206	20	-
C. Consultancy Services & Training					
1. Training	-	1,703	1,703	-	4
2. Support Services Team for WUCs	-	709	709	-	2
3. Surveys and Studies					
a. Monitoring and Evaluation	-	634	634	-	1
b. Survey, Design and Studies	2,682	3,610	6,292	43	14
Subtotal Surveys and Studies	2,682	4,245	6,927	39	16
4. Support Consultants					
International Consultants	1,307	-	1,307	100	3
National Consultants	-	1,994	1,994	-	5
Consultancy Support	50	451	501	10	1
Subtotal Support Consultants	1,357	2,445	3,802	36	9
Subtotal Consultancy Services & Training	4,039	9,101	13,140	31	30
D. Staff Costs	-	5,240	5,240	-	12
Total BASELINE COSTS	4,081	39,634	43,714	9	100
Physical Contingencies	51	1,374	1,425	4	3
Price Contingencies	164	1,468	1,632	10	4
Total PROJECT COSTS	4,295	42,476	46,771	9	107
Interest During Implementation	-	1,170	1,170	-	2
Commitment Charges	-	59	59	-	-
Total Costs to be Financed	4,295	43,708	48,000	9	109

D. Allocation and Withdrawal of Loan Proceeds for Project-1

Number	Item	Total Amount Allocated for ADB Financing (\$)		Percentage and Basis for Withdrawal from the Loan Account
		Category	Subcategory	
1	Civil Works	18,479,000		74% total expenditure claimed
2	Equipment & Supplies	165,000		80% total expenditure claimed
3	Training	1,533,000		90% total expenditure claimed
4	Support Services Team for WUCs	673,000		95% total expenditure claimed
5	Surveys and Studies	4,568,000		
5A	Monitoring and Evaluation		571,000	90% total expenditure claimed
5B	Survey, Design and Studies		3,997,000	64% total expenditure claimed
6	Support Consultants	3,438,000		
6A	International Consultants		1,307,000	100% total expenditure claimed
6B	National Consultants		1,745,000	88% total expenditure claimed
6C	Consultancy Support		386,000	77% total expenditure claimed
7	Unallocated	2,144,000		
	Total	31,000,000		

E. Detailed Cost Estimates by Financier for Project-1

	ADB		Govt.		Beneficiaries		Total	
	Amount	%	Amount	%	Amount	%	Amount	%
I. Investment Costs								
A. Civil Works*	18,479	74.6	6,307	25.4	-	-	24,786	51.6
Command area development works (by beneficiaries)					342	100.0	344	0.7
B. Equipment and Supplies	165	80.0	41	20.0	-	-	206	0.4
C. Consultancy Services & Training	-		-		-		-	0.0
1. Training	1,533	90.0	170	10.0	-	-	1,703	3.5
2. Support Services Team for WUCs	673	95.0	35	5.0	-	-	709	1.5
3. Surveys and Studies	-		-		-		-	0.0
a. Monitoring and Evaluation	571	90.0	63	10.0	-	-	634	1.3
b. Survey, Design and Studies	3,997	63.5	2,295	36.5	-	-	6,292	13.1
Subtotal Surveys and Studies	4,569	66.0	2,358	34.0	-	-	6,927	14.4
4. Support Consultants	-		-		-		-	0.0
International Consultants	1,307	100.0	-	-	-	-	1,307	2.7
National Consultants	1,745	87.5	249	12.5	-	-	1,994	4.2
Consultancy Support	386	77.0	115	23.0	-	-	501	1.0
Subtotal Support Consultants	3,439	90.4	363	9.5	-	-	3,802	7.9
Subtotal Consultancy Services & Training	10,232	77.9	2,909	22.1	-	-	13,140	27.4
D. Staff Costs	-	-	5,240	100.0	-	-	5,240	10.9
BASELINE PROJECT COSTS	28,856	66.0	14,456	33.2	342	0.8	43,654	90.6
Contingencies	2,144	70.2	942	28.9	30	0.9	3,116	6.8
TOTAL PROJECT COSTS	31,000	66.3	15,398	32.9	372	0.8	46,771	97.4
Interest During Implementation		-	1,170	100.0	-	-	1,170	2.4
Commitment Charges	-	-	59	100.0	-	-	59	0.1
Total Disbursement	31,000	64.6	16,627	34.6	372	0.8	48,000	100.0

* includes irrigation works for main and distributary canal structures and earthworks and command area development works.

F. Detailed Cost Estimates by Financier for MFF

	Govt.	%	ADB	%	Bens	%	Total	%
I. Investment Costs								
A. Civil Works	48,179	27.3	123,601	70.1	4,657	2.6	176,437	78.4
B. Equipment and Supplies	87	20.0	349	80.0	-	-	437	0.2
C. Consultancy Services & Training								
1. Training	317	10.0	2,849	90.0	-	-	3,166	1.4
2. Support Services Team for WUCs	484	5.0	9,205	95.0	-	-	9,689	4.3
3. Surveys and Studies								
a. Monitoring and Evaluation	110	10.0	986	90.0	-	-	1,096	0.5
b. Survey, Design and Studies	4,082	38.3	6,586	61.7	-	-	10,669	4.7
Subtotal Surveys and Studies	4,192	35.6	7,572	64.4	-	-	11,764	5.2
4. Support Consultants								
International Consultants	-	-	2,461	100.0	-	-	2,461	1.1
National Consultants	497	12.5	3,476	87.5	-	-	3,973	1.8
Consultancy Support	186	20.5	721	79.5	-	-	907	0.4
Subtotal Support Consultants	683	9.3	6,658	90.7	-	-	7,341	3.3
Subtotal Consultancy Services & Training	5,676	17.8	26,284	82.2	-	-	31,960	14.2
D. Staff Costs	11,249	100.0	-	-	-	-	11,249	5.0
Total PROJECT COSTS	65,191	29.6	150,235	68.3	4,657	2.1	220,082	97.8
Interest During Implementation	4,374	100.0	-	-	-	-	4,374	1.9
Commitment Charges	544	100.0	-	-	-	-	544	0.2
Total Disbursement	70,109	31.2	150,235	66.8	4,657	2.1	225,000	100.0

G. Detailed Cost Estimates by Outputs/Components for Project-1

	State & Basin Institutions Strengthened for IWRM	Irrigation System Infrastructure & Management Modernized	Project Management	Total	Physical Contingencies %	Amount
I. Investment Costs						
A. Civil Works	-	25,128	-	25,128	5.0	1,256
B. Equipment and Supplies	136	17	53	206	10.0	21
C. Consultancy Services & Training						
1. Training	1,703	-	-	1,703	-	-
2. Support Services Team for WUCs	-	412	296	709	-	-
3. Surveys and Studies						
a. Monitoring and Evaluation	-	-	634	634	-	-
b. Survey, Design and Studies	5,527	765	-	6,292	-	-
Subtotal Surveys and Studies	5,527	765	634	6,927	-	-
4. Support Consultants						
International Consultants	614	-	694	1,307	3.6	47
National Consultants	576	-	1,418	1,994	5.1	101
Consultancy Support	171	-	329	501	-	-
Subtotal Support Consultants	1,361	-	2,441	3,802	3.9	148
Subtotal Consultancy Services & Training	8,592	1,177	3,371	13,140	1.1	148
D. Staff Costs	3,632	-	1,608	5,240	-	-
Total BASELINE COSTS	12,359	26,322	5,033	43,714	3.3	1,425
Physical Contingencies	14	1,258	153	1,425	-	-
Price Contingencies						
Inflation						
Local	1,718	4,418	857	6,993	-	-
Foreign	136	0	28	164	-	-
Subtotal Inflation	1,853	4,418	885	7,157	-	-
Devaluation	-1,357	-3,491	-677	-5,525	-	-
Subtotal Price Contingencies	497	928	208	1,632	3.0	48
Total PROJECT COSTS	12,869	28,508	5,393	46,771	3.2	1,473
Taxes	313	1,195	317	1,824	3.8	69
Foreign Exchange	3,478	4	813	4,295	1.2	53

H. Detailed Cost Estimates by Outputs/Components for MFF

	State & Basin Institutions Strengthened for IWRM	Irrigation System Infrastructure & Management Modernized	Project Management	Total	Physical Contingencies %	Amount
I. Investment Costs						
A. Civil Works	-	159,141	-	159,141	5.0	7,957
B. Equipment and Supplies	136	156	96	388	10.0	39
C. Consultancy Services & Training						
1. Training	2,957	-	-	2,957	-	-
2. Support Services Team for WUCs	-	2,591	6,419	9,010	-	-
3. Surveys and Studies						
a. Monitoring and Evaluation	-	-	1,021	1,021	-	-
b. Survey, Design and Studies	9,245	765	-	10,010	-	-
Subtotal Surveys and Studies	9,245	765	1,021	11,031	-	-
4. Support Consultants						
International Consultants	800	-	1,404	2,204	4.7	103
National Consultants	995	-	2,535	3,529	5.2	182
Consultancy Support	300	-	550	850	-	-
Subtotal Support Consultants	2,095	-	4,488	6,583	4.3	285
Subtotal Consultancy Services & Training	14,297	3,356	11,928	29,581	1.0	285
D. Staff Costs	6,259	-	4,281	10,539	-	-
Total BASELINE COSTS	20,692	162,654	16,304	199,650	4.2	8,281
Physical Contingencies	14	7,999	295	8,308	-	-
Price Contingencies						
Inflation						
Local	5,291	46,004	5,326	56,620	-	-
Foreign	353	1	115	469	-	-
Subtotal Inflation	5,644	46,005	5,441	57,089	-	-
Devaluation	-4,234	-36,449	-4,256	-44,939	-	-
Subtotal Price Contingencies	1,410	9,586	1,185	12,151	3.8	467
Total PROJECT COSTS	22,115	180,182	17,784	220,082	4.0	8,748
Taxes	537	7,311	884	8,732	4.2	368
Foreign Exchange	5,678	36	1,698	7,411	1.6	119

I. Detailed Cost Estimates by Year for Project-1

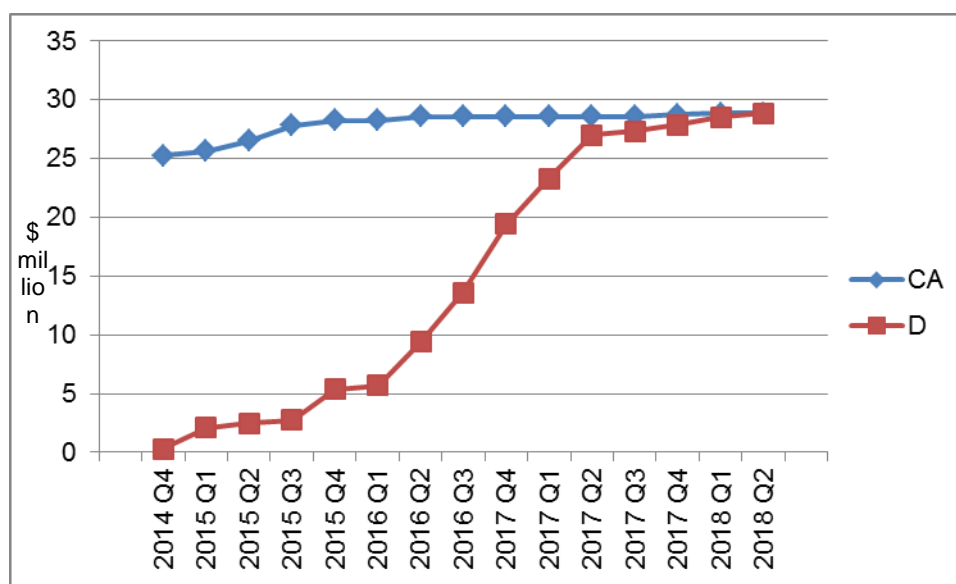
			Base	Cost				
	2014	2015	2016	2017	2018	2019	2020	Total
I. Investment Costs								
A. Civil Works	7,529	8,187	7,296	1,932	184	-	-	25,128
B. Equipment and Supplies	206	-	-	-	-	-	-	206
C. Consultancy Services & Training								
1. Training	326	513	473	391	-	-	-	1,703
2. Support Services Team for WUCs	64	268	251	70	57	-	-	709
3. Surveys and Studies								
a. Monitoring and Evaluation	248	44	44	299	-	-	-	634
b. Survey, Design and Studies	1,459	1,617	2,003	1,214	-	-	-	6,292
Subtotal Surveys and Studies	1,706	1,661	2,047	1,513	-	-	-	6,927
4. Support Consultants								
International Consultants	426	324	294	263	-	-	-	1,307
National Consultants	500	500	500	495	-	-	-	1,994
Consultancy Support	152	116	116	116	-	-	-	501
Subtotal Support Consultants	1,078	940	910	874	-	-	-	3,802
Subtotal Consultancy Services & Training	3,173	3,381	3,681	2,848	57	-	-	13,140
D. Staff Costs	1,409	1,293	1,269	1,269	-	-	-	5,240
Total BASELINE COSTS	12,318	12,862	12,245	6,049	240	-	-	43,714
Physical Contingencies	434	447	402	133	9	-	-	1,425
Price Contingencies	121	402	649	437	22	-	-	1,632
Total PROJECT COSTS	12,874	13,710	13,296	6,619	272	-	-	46,771
Taxes	531	546	492	243	11	-	-	1,824
Foreign Exchange	1,103	970	1,266	957	-	-	-	4,295

J. Detailed Cost Estimates by Year for MFF

			Base	Cost				
	2014	2015	2016	2017	2018	2019	2020	Total
I. Investment Costs								
A. Civil Works	7,529	42,698	43,846	32,246	30,497	2,326	-	159,141
B. Equipment and Supplies	206	130	52	-	-	-	-	388
C. Consultancy Services & Training								
1. Training	326	513	473	391	432	391	432	2,957
2. Support Services Team for WUCs	114	1,220	1,765	2,026	1,746	1,346	793	9,010
3. Surveys and Studies								
a. Monitoring and Evaluation	248	44	44	299	44	44	299	1,021
b. Survey, Design and Studies	1,459	1,617	2,003	1,214	1,239	1,290	1,188	10,010
Subtotal Surveys and Studies	1,706	1,661	2,047	1,513	1,283	1,334	1,487	11,031
4. Support Consultants								
International Consultants	426	324	294	263	299	299	299	2,204
National Consultants	500	500	500	495	520	515	500	3,529
Consultancy Support	152	116	116	116	116	116	116	850
Subtotal Support Consultants	1,078	940	910	874	935	930	915	6,583
Subtotal Consultancy Services & Training	3,224	4,334	5,195	4,804	4,396	4,002	3,626	29,581
D. Staff Costs	1,409	1,741	1,645	1,645	1,487	1,487	1,125	10,539
Total BASELINE COSTS	12,368	48,903	50,738	38,694	36,380	7,815	4,751	199,650
Physical Contingencies	434	2,185	2,235	1,648	1,571	163	45	8,281
Price Contingencies	122	1,543	2,718	2,854	3,417	875	622	12,151
Total PROJECT COSTS	12,924	52,631	55,691	43,197	41,368	8,852	5,417	220,082
Taxes	534	2,118	2,197	1,711	1,633	328	211	8,732
Foreign Exchange	1,103	999	1,278	957	1,007	1,025	1,043	7,411

K. Contract and Disbursement S-curve

29. The graph below shows the contract awards and disbursements curves for ADB's portion of PFR1 based on the procurement plan and implementation schedule. Total projected contract awards and disbursements only included allocated portion of \$31 million. A total of \$2.14 million remains unallocated. Within fourth quarter of 2014, expected contract awards amount to \$25.229 million for Gondhi civil works for a total \$16 million (out of which ADB's portion is \$11.83 million), telemetry system, and program support consultants. Succeeding quarters up to fourth quarter of 2017 would show contract awards for other consultants services (strengthening consultants, environmental monitoring and effects monitoring consultants), and command area development works in multiple lots. Disbursements follow a progressive curve based on mobilization fee requirements and progress payments under the various contracts and implementation schedule.



V. FINANCIAL MANAGEMENT

A. Financial Management Assessment

30. Financial management assessment was carried out for KNNL, the irrigation corporation established by the State (the EA), and for the AC-IWRM—the implementing agency for output 1. The assessment was primarily focused on the financial management capacity of these agencies pertaining to planning, budgeting, fund flow arrangements, accounting and financial reporting, internal controls, audit and asset management. The objective is to assess the overall capacity to utilize funds provided for the intended purposes, and to maintain proper documentation. The findings from this assessment were considered while drawing up the financial management arrangements and oversight for the project.

Table 6: Summary of the Financial Management Assessment of the EA

Particulars	Conclusions
A. Funds Flow Arrangements	The existing fund flow arrangements are treasury based transfers from the State (SGOK) to KNNL and AC-IWRM (Implementing Agency). KNNL thereafter does onward transfers to field units based on the verification and authorization of the requests for transfer of funds by the Chief Accounting Officer, who is the Disbursing Officer and the Joint Controller of State Accounts Department. This arrangement has adequate checks and balances to ensure compliance to Public Works Department Code provisions under the Karnataka Finance Code and Companies Act 1956. All fund transfers are being carried out through "Real Time Gross Settlement (RTGS)"

Particulars	Conclusions
	<p>– local online Electronic Clearing System (ECS) approved under the Reserve Bank of India's Banking guidelines.</p> <p>In the case of AC-IWRM, the funds are drawn from the Treasury and transferred to the current account of the agency with the local bank to facilitate withdrawals to meet its project activities and day-to-day expenditure.</p> <p>KISWRMIP(MFF) will be pre-financed by SGOK and will follow the existing fund flow arrangements with a minor change i.e. budgetary allocations (combined share of ADB and SGOK) provided for the project will be transferred to a dedicated project Bank account maintained by KNNL to facilitate timely disbursements for project implementation. Separate project bank accounts will also be maintained by AC-IWRM for receipt of funds allocated for under the project to ensure ring fencing of project financial statements. Detailed fund flow and disbursement arrangements are given in Figure 1 under para. 39 below on Fund Flow Arrangements.</p>
B. Staffing	<p>KNNL is being staffed with key experienced personnel drawn from other departments including the Water Resources, and State Finance Departments with additional inputs from contractual experts drawn from the market to service the gaps to facilitate execution of KNNL activities.</p> <p>A Program Management Unit (PMU) will be established in KNNL for management and administration of KISWRMIP. Staff and other experts will undergo regular trainings on ADB's procurement and financial management procedures and other such programs to enhance their capacities and knowledge.</p> <p>AC-IWRM is also being staffed with finance personnel drawn from the state accounts cadre. These personnel are well versed with the accounting and auditing procedures followed by the State and are capable of proper maintenance of records. Being a nascent organization (one year old) the agency is building up staffing. Currently most of the regular staff deputed on a dual charge basis.</p> <p>The EA and IAs undergo regular training from Karnataka State Public Enterprises Board - the nodal agency for training all Finance & Accounts staff and other staff, in addition to the training programs of other institutes and project specific trainings by funding agencies like ADB through the procurement clinics.</p>
C. Accounting Policies and Procedures	KNNL accounting policy is based on the Accounting Standards and Financial Reporting Regulations followed in India and accepted by ADB in its other ongoing projects in India.
D. Internal and External Audits	<p>Internal audits is being carried out by the Audit Officer recruited by KNNL while external/statutory audit is done by the Office of the Accountant General in the State – the state wing of the Comptroller and Audit General (CAG).</p> <p>For this MFF, internal auditor and external auditors will be recruited to facilitate timely audit of the project financial statements at KNNL, AC-IWRM and PIO offices of KNNL implementing the program, and submission of the Annual Project Financial Statements and Audit report to ADB within six (6) months of completion of each fiscal year.</p>
E. Reporting and Monitoring	KNNL will comply with the reporting requirements of ADB, and submit their reports to SGOK, DEA, Ministry of Finance, Govt. of India
F. Information Systems	The existing Management Information System (MIS) used for financial management by KNNL will be further developed and upgraded to a real time based financial management system networked with the field offices of KNNL implementing various projects and other implementing agencies under the project. This system will also be interfaced with the MIS proposed to be developed for management of IWRM data under the project and would also be installed in AC-IWRM.

Source: PPTA Financial Management consultant.

31. **Risk Assessments:** Institutional, procurement and financial assessments of the executing and the implementing suggest that the PMU may face some minor risks that could affect timely program implementation. However, these risks may effectively be mitigated through

agency-specific measures. Financial management risks for the program and the associated risk mitigation measures will be updated throughout the implementation of the KISWRMIP. The assessment findings are as follows:

Table 7: Risk Management Plan

Sl. No.	Risk Description	Risk Assessment	Mitigation Measures or Risk Management Plan
1.	Governance	L	<ul style="list-style-type: none"> Administrative systems and practices well established including procurement and financial management. Separate Program Management Unit headed by a Program Director who is also the Managing Director of KNNL – the EA, and dedicated staff for day-to-day management. Project Implementation Offices (PIO) under the EA will be dedicated units in the field for project implementation
2.	Limited capacity of AC-IWRM	M-H	<ul style="list-style-type: none"> Upfront actions completed to define policy, planning, and institutional framework with AC-IWRM Extensive support to be provided by international and national sector experts Initial procurement activities will be supported by consultants from PSC Procurement support will be provided by program support consultants (PSC). In addition to PSC, capacity enhancement support will also be provided by ADB through its regular training programs.
3.	Slow procurement due to limited financial and approval powers	M	<ul style="list-style-type: none"> Program Director is MD KNNL and has approval authority for all procurement of works, goods and services following recommendation of technical sub-committee. E-Procurement mandatory for all procurements estimated above \$4,000; ADB assessment of e-Procurement for ICB, NCB and shopping procedures underway. Advance procurement and consultant engagement based on agreed procurement plan Implementation support to be provided for pre-project activities The procurements by AC-IWRM are relatively minor (equipments and individual consultants) and will be approved by the Management Committee. Support will be provided by PSC and PMU
4.	Potential for corruption and low quality of works	M	<ul style="list-style-type: none"> Existing Grievance Redress Mechanism will be enhanced and integrated with the Management Information System (MIS) to be established. Interface with MIS data base to provide links for disclosure of key documentation and other related program information through KNNL website for public viewing. Review by visiting ADB missions and senior officials of SGOK Asset verification to be carried out by PIO and recorded in the MIS. Stringent quality monitoring by Project Supervision Consultants and PIO engineers in the field
5.	Poor time and quality management of contractors	M-L	<ul style="list-style-type: none"> Practical bid pricing based on market rates, price adjustment mechanism during implementation Procurement of civil works limited to one single large package. Goods/services procurements will follow ADB's Procurement Guidelines (2013, as amended from time to time), and will be based on prior approval unless otherwise communicated in accordance with an agreed procurement plan.

Sl. No.	Risk Description	Risk Assessment	Mitigation Measures or Risk Management Plan
			<ul style="list-style-type: none"> ▪ Sound construction management following ADB standard bid documents (including FIDIC provisions) ▪ Mobilization of PSC to support stringent quality monitoring and management using modern technologies ▪ Participation of PIO engineers to monitor construction quality
6.	Limited WUCS participation in Project activities	M	<ul style="list-style-type: none"> ▪ Sufficient awareness and motivation campaigns with the support of experienced and NGOs trained by consultants ▪ Initial focus on highly vulnerable areas and demonstration of program quality
7.	Limited application of safeguards by a) KNNL b) WUCS	M H	<ul style="list-style-type: none"> ▪ Special training programs both by ADB and PSC will be done at regular intervals to improve knowledge and application of safeguard measures by KNNL staff, PIO engineers and contractors. ▪ Extensive information, education and communication activities will be carried out in the field to improve awareness of WUCS members.
8.	Sustainability of KISWRMIP infrastructure	H	<ul style="list-style-type: none"> ▪ Asset inventory and MIS for infrastructure performance monitoring and maintenance planning will be established ▪ Progressive increase of maintenance fund allocation by SGOK in public infrastructures (ongoing and to continue) ▪ Improved technical management of O&M of assets established at field level with higher transparency and accountability ▪ Utilization of available SGOK/GOI funds for routine maintenance works ▪ WUCS capacity building in O&M ▪ Increased application of IWRM practices in operation of assets established under the MFF and other schemes
9.	Unavailability of Timely fund flow	M-L	<ul style="list-style-type: none"> ▪ SGOK to ensure timely release of project and counterpart fund to KNNL's and AC-IWRM's Personal Deposit Account for transfer to dedicated project bank account maintained by each of these entities. ▪ Establishment of dedicated project bank account to ensure timely payments to contractors/supplier/service providers and IAs. ▪ Transfer of approved budgetary allocations to Personal Deposit Account within 15 days of receipt of Request for Funds
10.	Varying performance in financial and procurement management	L	<ul style="list-style-type: none"> ▪ KNNL's MIS system to be upgraded to real time-based operational system linked to Chief Accounts Officer (CAO) of SGOK and PIO offices¹¹ through Karnataka State Wide Area Network (KSWAN) ▪ Similar arrangements will also be installed in AC-IWRM to support integrated data management. ▪ Specially assigned finance and accounts staff for the project in PMU and PIO offices. In view of the limited financial transactions by AC-IWRM during the life of the project, the existing FM staff in the agency will continue to manage the project funds. ▪ Sufficient training of FA staff by consultants and MIS service provider

¹¹ PIO– units implementing KNNL activities in the field.

Sl. No.	Risk Description	Risk Assessment	Mitigation Measures or Risk Management Plan
			<ul style="list-style-type: none"> Advance Training on Financial Management, Procurement and Performance Monitoring for PMU, IA and PIO staff
11.	Accounting and Audit capacities	L	<ul style="list-style-type: none"> SGOK's approved accounting regulations will be followed in addition to maintenance of accounts and records as required by ADB Establishment of MIS for improvement of financial management, to enhance accounting standards and capacities in KNNL, AC-IWRM and PIO offices Sound internal and external auditing mechanism with the latter following the standards for audit issued by Indian Chartered Accountant Institute -Comptroller and Auditor General Independent firms will be hired for carrying out internal and external audits under an agreed ToR with ADB
Overall Risk Rating		Medium	
* H = High, S = Substantial, M = Moderate, L = Low, N = Negligible			
Source: PPTA consultants			

32. **Staffing:** The PMU will be staffed with (at the State level) the existing General Manager (Finance) and Finance Manager of KNNL who will be assigned with additional responsibility for oversight of financial management of the program during implementation. One existing Deputy Manager (Finance) and Accounts Officer of KNNL will be assigned to the PMU with additional charge for: (i) coordination of all financial management requirements of the program in the State, (ii) maintenance of all program accounts, (iii) preparing financial progress and monitoring reports, (iv) follow up with the State for the release of funds, processing fund transfer requests from implementing agencies, Chief Accounts Officers (CAOs) and subproject (v) implementing divisions, (vi) preparation and submission of withdrawal applications to Controller of Audit and Aid Accounts (CAAA) of the Ministry of Finance for reimbursement from ADB (vii) operationalization of MIS based Financial Management System in KNNL head office and field divisions, (viii) asset-inventory management, (ix) overseeing the work of the internal auditors and coordinating the work of external auditors. These two officers will be assisted by two accounts assistants either drawn on deputation from other departments or contracted from open market. Assignment of Deputy Manager (Finance) and Accounts Officer in PMU will be completed before loan approval.

33. The existing staff of AC-IWRM responsible for financial management shall continue to provide their services for this project. The Accounts Superintendent is the head of the finance division who is supported by a Chief Accounts Officer, and two accountants – all on part time basis although they are regular SGOK staff drawn from the accounting cadre of the state. As the operations under the project increase, full time staff would be posted in AC-IWRM.

34. In the office of the CAO, one existing Accounts Officer (AO) will be assigned with additional charge to verify, supervise and monitor the financial transactions of KNNL irrigation zones implementing the subprojects under this MFF. The AO will be assisted by one existing audit officer and one accounts assistant. At the zonal level, the existing accountant will be given additional charge to maintain the books of accounts and finance for the approved subproject activities in the respective irrigation zone.

35. PMU and PIO staff will undergo trainings from time to time on ADB's procurement and financial management procedures to further strengthen its capacity and enable them to

disseminate best practices and knowledge transfer to build improve the capacities of their parent departments.

B. Budget

36. **Budget Line Item in SGOK Budget:** The project will be pre-financed by SGOK through a dedicated budget head, separately identifiable line item for the ADB project in the Demand for Grants of the State Water Resources Department (WRD) for allocation of funds for the program starting Financial Year 2013-14 based on the expenditure for the program for FY2013-14. The budget submitted shall include both ADB's share and counterpart (State) contribution agreed to finance approved activities planned under the Program. Upon approval of budget by the State legislature, WRD would release funds under this subhead to the Personal Deposit Account¹² of KNNL and AC-IWRM (as requested), to allow these agencies to effect need based draw down of funds to finance approved Program activities.

C. Fund Flow Arrangements

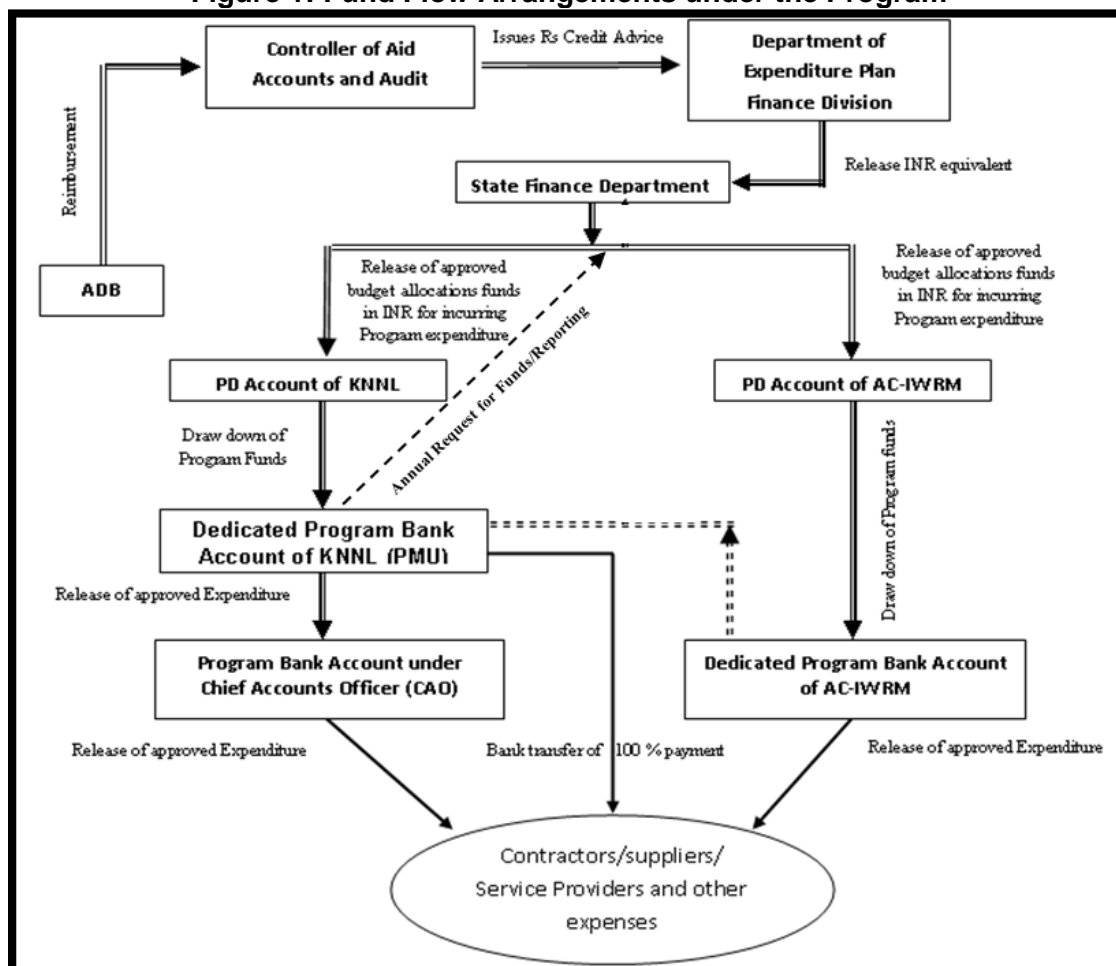
37. **Bank Account:** KNNL and AC-IWRM will open separate project bank accounts with State Bank of Mysore to receive and disburse funds allocated for the program from their respective Personal Deposit Accounts, to avoid co-mingling with overall funds received by KNNL and to facilitate withdrawals/onward transfers to IAs, CAO and PIO thereof for effecting payments to contractors/ service providers, etc. The IAs and CAO-PIO shall open individual Program Bank Accounts to receive funds from KNNL to finance approved sub-projects/ activities only under the Program. The Program funds will not be transferred to any bank accounts maintained for receipt of other funds and or be used for temporary bridging of resource gaps for other activities outside the scope of this program.

38. **Fund Flow Arrangements:** The fund flow arrangements for the project will be on a reimbursement basis, wherein eligible expenditures (inclusive of ADB's share and counterpart contributions) will be pre-financed by the State from its consolidated account to the Personal Deposit accounts of KNNL and AC-IWRM, respectively. Funds flow from the treasury account to KNNL's and AC-IWRM's Personal Deposit accounts will be either on a quarterly/monthly basis and or more frequently based on the expenditure incurred by the program. KNNL will transfer funds to the separate program bank accounts in the respective CAO based on the indent raised for disbursement against verified and approved bills/invoices, and or other expenditure duly approved by the CAO.

39. On receipt of confirmation of transfer of funds by KNNL, the CAO shall authorize payments through bank transfers from the program bank account to the respective contractors/ service providers. The PIO shall submit the utilization certificates for the expenditure duly authorized by CAO to KNNL after completion of the transaction against each bill/invoice certified for payment by the CAO. Similarly, the CAO in AC-IWRM shall submit utilisation certificates for the expenditure duly authorized by the Accounts Superintendent to PMU for the later to consolidate the expenditure claims for submission to CAAA-ADB for reimbursement. The detail fund flow arrangements are given in Figure 1 for clarity.

¹² Personal Deposit Account is a device intended to facilitate the administrator thereof to credit receipts into, and effect withdrawals directly from, the account subject to an overall check being exercised by the bank in which the account is authorized to be opened, to ensure (with the help of a personal ledger account to be maintained by the bank for the purpose) that no withdrawal will result in a minus balance therein. The administrators thereof shall be only Government officers acting in their official or any other capacity (<http://cga.nic.in/html/book4/part4.htm>).

Figure 1: Fund Flow Arrangements under the Program



40. Upon receipt of documentation of completion of the financial transaction, KNNL will submit to CAAA withdrawal application with the Statement of Expenditures (SoE) eligible for ADB financing under various categories and corresponding percentage of financing as detailed in the Allocation and Withdrawal of Loan Proceeds (Section IV-C above), as agreed in the Framework Financing Agreement (FFA) under this Multi-tranche Financing Facility (MFF).

D. Existing Fund Flow Arrangements for AC-IWRM

41. **Organization:** The Advanced Centre for Integrated Water Resources Management (AC-IWRM) is an organization registered in February 2012 under the Karnataka Societies Registration Act 1960. It is a state owned establishment designated to work under WRD to focus specifically on IWRM policy analysis and research, development of an updated water sector knowledge base, and assist the Water Resources Department to provide leadership in the realization of IWRM in Karnataka.

42. The reporting requirements of this organization are channeled through the Water Resources Department, SGOK. The Governing Body of AC-IWRM is chaired by state Chief Minister, while the Executive Committee which provides the policy and overall guidance and directions is chaired by the Chief Secretary of the State and the Management Committee implementing the directions of the Executive Committee is headed by the Principal Secretary, WRD, SGOK.

43. As a standard procedure for state owned agencies in Karnataka, the financial management of AC-IWRM is governed by the Public Works Department codal provisions, departmental codes of accounting, procedures and statutory requirements under the Karnataka Societies Act, KTPP Act, Karnataka Finance Code and Manual of Contingent Expenditures, and other circulars /guidelines issued by SGOK from time to time. The standards of accounting follow those prescribed by the Institute of Chartered Accountants of India (ICAI). Being a nascent organization (one year old) the volume of transactions has been limited (mainly limited staffing salaries and operational costs). It is expected to increase through the program's support which will strengthen the capacity of AC-IWRM and provide expert guidance on introducing IWRM in Karnataka.

44. **Budgetary allocations:** The funds required for AC-IWRM follows the standard procedure as it is dependent on budgetary allocations of the WRD wherein budgetary provisions are given through a separate sub budget head in the name and form of AC- IWRM. The annual budget requirements are prepared by the Member Secretary of the Managing Committee and submitted to the Executive Committee for approval and onward submission to WRD for incorporation in the latter's overall plan budget for a particular FY. Based on the budget eventually approved by SGOK for a specific FY, AC-IWRM submits its request to WRD for release of funds on a quarterly basis (currently followed but not restricted to shorten the intervals of request as required based on the regularity of expenditure). For 2013, the budget allocation is approximately \$10 million.

45. The **fund flow arrangements** are treasury based transfers from SGOK to AC-IWRM. Based on the merit of the request (indent) for funds is submitted by the Chief Accounts Officer, AC-IWRM to WRD, and after due scrutiny by the Accounts Officer of WRD, the Demand for Grants of the State Water Resources Department (WRD) is submitted to Department of Finance for release of funds from the Consolidated Account (treasury account) to the Personal Deposit Account of AC-IWRM. Upon credit of funds into the Personal Deposit Account, the funds are transferred to the current account of AC-IWRM operated in the State Bank of Mysore, Bangalore-

560001. The funds are thereafter drawn from this account to meet the expenditure of the agency including those required for payments of Goods, works and services contracted by the agency from time to time. All fund transfers are being carried out through “Real Time Gross Settlement (RTGS)” – local online Electronic Clearing System (ECS) approved under the Reserve Bank of India’s Banking guidelines.

46. **Accounting:** The signatories for release of funds in addition to the Managing Director/CEO are Accounts Superintendent and the Superintendent Engineer posted in AC-IWRM. Procurement, contracting, receipt of supplies and certification are carried out by the engineering wing, while recording transactions, payment and verifying contract compliance is done by Account and finance wing of the agency. All project expenditure and establishment costs drawn from the bank account are reconciled on monthly basis. The Executive Engineer posted in AC-IWRM approves payments cleared for disbursements and Accounts Superintendent reconciles the payments effected in the bank statements, separately. In addition, the finance/account department also reconciles the bank accounts which will be audited by statutory auditor. The accounts and finance staff posted in AC-IWRM are either from the State Accounts cadre or on deputation from Department of Finance, SGOK and are well versed with the accounting and finance management procedures followed by SGOK. This arrangement has adequate checks and balances to ensure compliance to Public Works Department Code provisions under the Karnataka Finance Code and Companies Act 1956..

47. **Audit:** No internal auditor has been appointed as no statutory requirement of appointment of internal auditor exists in the Karnataka Societies Act. The external auditor for statutory audits is appointed by the Executive Committee of AC-IWRM as per the laws under the said Act. The first annual audit is currently due and is expected to be completed by December 2013. All project and other expenditure accounts are prepared and controlled by the staff/officers posted in AC-IWRM, verified and audited by statutory auditors on an annual basis. The audit report submitted is reviewed by the Executive Committee which directs remedial measures should there be a qualified opinion or other recommendations for improving the financial management. The final audit report with the Management letter is tabled at the Governing Body for its concurrence before public disclosure of the same.

48. The KNNL as a registered company and AC-IWRM as a registered society can make financial transactions with each other. For CADA, its required staff will be deputed under the PIO and payments made through this arrangement.

E. Disbursement Procedures

49. Disbursement of loan proceeds under the MFF will be in accordance with ADB’s *Loan Disbursement Handbook* (2012, as amended from time to time)¹³ and the detailed arrangements agreed upon between the government and ADB.

50. The SGOK has opted to pre-finance the expenditure under KISWRMIP and seek reimbursement of eligible expenditure from ADB. A communication to the effect has been submitted by the State to DEA, Ministry of Finance, Government of India. The disbursement arrangements for the Program will be on a reimbursement basis. Therefore, this FAM will not detail the procedures and requirements for maintenance of imprest Account with CAAA and the subaccounts by KNNL. However, the option for SGOK-KNNL to access this facility anytime

¹³ Available at: <http://www.adb.org/sites/default/files/loan-disbursement-handbook.pdf>

during the program implementation period will continue to remain open and the procedures for the same may be accessed in *ADB's Loan Disbursement Handbook* available at www.adb.org.

51. **Types of Disbursement Arrangements.** Under the investment program and projects the following will apply::

- (i) Reimbursement procedure (with or without full supporting documents) where ADB pays from the loan account to the borrower's account, or in some cases, to the project account for eligible expenditures which have been incurred and paid for by the project out of its budget allocation or its own resources.

52. Required actions prior to submission of withdrawal application includes but not limited¹⁴ to the following:

- (i) Authorized signatory letter from SGOK authorizing signatories and authentication of their signatures addressed to DEA, CAAA and ADB;
- (ii) Submission of Treasury Account details to DEA and CAAA for transfer of reimbursements from ADB to SGOK against eligible expenditures under the project;

53. **Statement of Expenditure (SOE) Procedure.** The SOE procedure will be used to reimburse/liquidate eligible expenditures not exceeding \$100,000 equivalent (as stated in ADB Loan Disbursement Handbook, 2012) for any individual payment. For all individual payments exceeding \$100,000 equivalent, documented claim procedure¹⁵ will be followed. Withdrawal applications for payments made to contractors/consultants in currencies other than Indian Rupees if any, will be submitted for reimbursement to CAAA-ADB will follow documented claim procedure and will be in the currency paid to contractors/consultants. Claims in the SOE sheets must carry on the corresponding Procurement Contract Summary Sheet (PCSS) number provided for each contract under the Program. SOE records should be maintained and made readily available for review by ADB's disbursement and review missions or upon ADB's request for submission of supporting documents on a sampling basis, and independent audit.

54. Before the submission of the first withdrawal application, the government or the EA should submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of the borrower, together with the authenticated specimen signatures of each authorized person.

55. **Minimum value per Withdrawal Application.** The minimum value per withdrawal application is US\$100,000, unless otherwise approved by ADB. KNNL will consolidate expenditure claims of PMU, AC-IWRM and others received from the PIOs, to meet this limit for reimbursement claims. Withdrawal applications along with the SOEs and supporting documents will demonstrate, among other things that the goods, and/or services were produced in or from ADB member countries, and are eligible for ADB financing. Similar eligibility condition will be detailed in the SOE should civil work contracts if any is awarded to a foreign contractor/company or joint venture.

¹⁴ Any additional requirements by GoI/CAAA enforced from time to time needs to be complied with by the State and executing agency.

¹⁵ All supporting approved invoices, bills, receipts of payment

56. All disbursements under government financing will be carried out in accordance with regulations of Government of India relevant to co-financing of the projects financed by the Multilateral Financing Organizations.

57. **Asset Inventory Management:** The internal auditor appointed for the Program will be assigned with the responsibility of providing the assurance and details of the end use of funds for creation of assets under KISWRMIP, by conducting a physical verification of the assets created before final payments for the same is released to the contractor. The internal auditor shall draw the assistance and reports of Project Supervision Consultants and PIO engineers on the technical quality, effective use and durability of the assets established and incorporate the findings in its consolidated report. The internal auditor shall draw the assistance and reports of Project Supervision Consultants and PIO engineers on the technical quality, effective use and durability of the assets established and incorporate the findings in its consolidated report. The internal auditor will regularly review the records and documentation maintained by AC-IWRM and Program implementing PIO and will seek to link these with the physical assets created. The report of the internal auditor will be feed into the asset inventory management register of the MIS maintained and operated by KNNL.

F. Finance Accounting and Auditing Requirements

58. KNNL, through the PMU and PIOs, will:

- (i) KNNL and AC-IWRM shall for this project maintain separate books and accounts relating to expenditure from all sources;
- (ii) KNNL and AC-IWRM shall separately prepare and submit audited project financial statements to ADB in the English language within 6 months of the end of the fiscal year;
- (iii) Project financial statements shall include at a minimum, a statement of receipts and payments with accompanying notes and schedules. These shall be prepared to ensure maximum alignment to international accounting standards¹⁶ and Government of India financial regulations. Template financial statements shall be used as a guide, will be provided by ADB.
- (iv) prepare and submit to ADB, annual contract awards and disbursement projections at least one month before the start of each calendar year;
- (v) record in a transparent manner all funds received from the SGOK and ADB;

59. **Internal Audit arrangements:** The internal audit of all expenditure under the program will be conducted by an independent auditing firm recruited by KNNL following ADB's procurement guidelines, under an agreed terms of reference. The objective of the internal audit is to strengthen the internal control framework and provide Program management with timely fiduciary assurance that: (i) the financial management, the procurement systems and the internal control procedures as applicable to the activities under the program are being adhered to by the PMU, AC-IWRM, PIOs and the support entities; and (ii) the financial information being submitted to and by the PMU is in agreement with the financial records, and agreements in the MFF, and can be relied upon to support the disbursements made by the Bank as reimbursement of eligible expenditures. Release of final installments to AC-IWRM, PIOs and the Program implementing PIO of KNNL for the assets created under the Program will be based on the verification by the internal auditor and upon receipt of the utilization certificates and

¹⁶ Cash Basis International Public Sector Accounting Standards

verification report from the auditor. The internal auditor will submit a quarterly internal audit report to the PMU. An executive summary of the key findings of the internal audit will also be submitted with the internal audit report to PMU for sharing the same with ADB, for the latter's information.

60. **External Auditors:** Project financial statements shall be subject to audit by an independent auditor appointed by the CAG, and acceptable to ADB. The audit shall be conducted audited in accordance with the International Standards of Supreme Audit Institutions INTOSAI, as appropriate and the guidelines and procedures set out by the CAG of India. The annual audit report will include an audit management letter and audit opinions which cover (i) whether the project financial statements present a true and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting framework; (ii) whether loan and grant proceeds were used only for the purposes of the project or not; (iii) the level of compliance for each financial covenant contained in the legal agreements for the project; (iv) use of the imprest fund procedure; and (v) the use of the statement of expenditure procedure certifying to the eligibility of those expenditures claimed under SOE procedures, and proper use of the SOE and imprest procedures in accordance with ADB's Loan Disbursement Handbook and the project documents.

61. To ensure the timely submission of audited project financial statements, KNNL and AC-IWRM shall formally request the CAG to include KNNL and AC-IWRM project audits in their yearly work plan through the DEA, at the time of loan negotiations. In addition, unaudited project financial statements should be submitted to for audit within 3 months of the end of the fiscal year.

62. In addition, KNNL and AC-IWRM shall also submit a copy of their own entity level audited financial statements within one month of their approval by their respective governing body. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal program supervision, and followed up regularly with all concerned, including the external auditor.

63. The government, KNNL and AC-IWRM have been made aware of ADB's policy on delayed submission, and the requirements for satisfactory and acceptable quality of the audited financial statements.¹⁷ ADB reserves the right to require a change in the auditor (in a manner consistent with the constitution of the recipient, or for additional support to be provided to the auditor, if the audits required are not conducted in a manner satisfactory to ADB, or if the audits are substantially delayed. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures.

¹⁷ ADB Policy on delayed submission of audited project financial statements:

- When audited project financial statements are not received by the due date, ADB will write to the executing agency advising that (i) the audit documents are overdue; and (ii) if they are not received within the next six months, requests for new contract awards and disbursement such as new replenishment of imprest accounts, processing of new reimbursement, and issuance of new commitment letters will not be processed.
- When audited project financial statements have not been received within 6 months after the due date, ADB will withhold processing of requests for new contract awards and disbursement such as new replenishment of imprest accounts, processing of new reimbursement, and issuance of new commitment letters. ADB will (i) inform the executing agency of ADB's actions; and (ii) advise that the loan may be suspended if the audit documents are not received within the next six months.
- When audited project financial statements have not been received within 12 months after the due date, ADB may suspend the loan.

64. Public disclosure of the project financial statements, including the audit report on the project financial statements, will be guided by ADB's Public Communications Policy (2011).¹⁸ After review, ADB will disclose the project financial statements for the project and the opinion of the auditors on the financial statements within 30 days of the date of their receipt by posting them on ADB's website. The Audit Management Letter and the entity level Audited Financial Statements will not be disclosed.

VI. PROCUREMENT AND CONSULTING SERVICES

A. Advance Contracting and Retroactive Financing

65. All advance contracting and retroactive financing will be undertaken in conformity with ADB's *Procurement Guidelines* (*Procurement Guidelines* (2013, as amended from time to time) (ADB's *Procurement Guidelines*)¹⁹ and ADB's *Guidelines on the Use of Consultants*²⁰ (2013, as amended from time to time) (ADB's *Guidelines on the Use of Consultants*). The issuance of invitations to bid under advance contracting and retroactive financing will be subject to ADB approval. The government, KNNL and AC-IWRM have been advised that approval of advance contracting and retroactive financing does not commit ADB to finance the Project.

66. Advance contracting for consultant and NGO engagement and procurement of goods and civil works, and retroactive financing will be applied for the Program. These arrangements have to be approved in principle for Project-1, and will be considered for subsequent Projects during the processing of individual PFRs. Total eligible expenditure under retroactive financing will not exceed an amount equivalent to 20% of the proposed amount for the respective loans under the Facility, and must have been incurred before effectiveness of the relevant loan, but not earlier than 12 months before the signing of the relevant legal agreements.

B. Procurement of Goods, Works and Consulting Services

67. All procurement of goods and works will be undertaken in accordance with ADB's *Procurement Guidelines*. All consulting services will be procured in accordance with ADB's *Guidelines on the Use of Consultants*.

68. **Procurement Plan** The procurement process for KISWRMIP Project-1 will follow the procurement plan that is shown as Annex 3 of the Periodic Financing Request (also shown as Appendix 7 of the FAM), as well as Schedule 4 of the Loan Agreement. The procurement plan indicates threshold and review procedures, goods, works, and consulting service contract packages and national competitive bidding guidelines. The procurement plan provides: (i) a list of goods, works, and consulting services contract packages that will be processed over the next 18 months with milestone dates for activities; (ii) the proposed methods for procurement of such contracts that are permitted under the respective loan agreements; and (iii) the related ADB review procedures. The procurement packages in the procurement plan will be updated by the PMU for approval by ADB. The procurement plan should be updated at least every 18 months (more frequently if necessary) and should cover the next 18 months of procurement activity. A delay in loan effectiveness, other start-up delays, and delays during implementation will require an unscheduled procurement plan update. ADB will review each updated procurement plan

¹⁸ Available from <http://www.adb.org/documents/pcp-2011?ref=site/disclosure/publications>

¹⁹ Available at: <http://www.adb.org/Documents/Guidelines/Procurement/Guidelines-Procurement.pdf>

²⁰ Checklists for actions required to contract consultants by method available in e-Handbook on Project Implementation at: <http://www.adb.org/documents/handbooks/project-implementation/>

prior to its publication. When appropriate, this activity may be undertaken in the field by ADB missions working with the executing and implementing agencies.

1. Civil Works

69. International competitive bidding (ICB) will be followed for civil work contracts costing \$40 million or more. This will be for Project-2 civil works for Vijaynagara (\$64.0 million) and TLBC (\$85 million). Civil works contracts costing less than \$40 million will be procured through national competitive bidding (NCB). This will include for Gondi irrigation modernization works which has been tendered as a single package of value approximately \$16 million. ADB standard bidding documents with post qualification under the single-stage two-envelope system will be adopted.

70. For NCB, ADB's prior review and concurrence is required for the first set of bidding documents. However, all bid evaluation reports will require prior review. Once the system is established to attain the conformity with ADB Procurement Guidelines and technical standards to be confirmed by ADB, bidding documents are forwarded to ADB for information.

71. For simple civil works of low value costing less than \$100,000, shopping procedure may be followed. Small community works (undertaken by the water user cooperative societies) associated with the minor canal and CAD works costing less than \$30,000 in value may be directly contracted with the concerned WUCS that include the relevant facilities in its command area and are in charge of their O&M. Procurement through the concerned WUCS through community participation modality (WUCS to execute works through transferred fund from the PIO) will also be followed subject to the acceptable terms and conditions of the SGOK and ADB.

72. For these minor works, ADB's prior review and concurrence is required for the initial bid documents and bid evaluation reports during the initial period until ADB confirms that the bid evaluation report (BER) and award of contract will be reviewed on a post-facto basis.

73. Force Account will be applicable only for emergent nature of work with the concurrence of MD KNNL to be met out of SGOK funds and to be accounted for separately under the project.

2. Goods and Related Services

74. In procuring goods and related services, ICB procedures will be used if the estimated cost is at least \$1 million and NCB procedures if the cost is between \$100,000 and \$1 million. In the case of the flow measurement and telemetry equipment for Project-1 this will be procured using ICB goods.

75. Shopping procedure may be followed if the estimated contract amount is less than \$100,000 for procuring low-value, readily available off-the-shelf goods. For the procurement of items below \$10,000, the EA may purchase the items directly from the supplier. In such cases, ADB should be satisfied that the price paid is reasonable.

76. For NCB, ADB's prior review and concurrence is required for the first set of bidding documents. However all bid evaluation reports will require prior review. Once the system is established to attain the conformity with ADB Procurement Guidelines to be confirmed by ADB, bidding documents are to be forwarded to ADB for information. For other types of procurement, the first draft English language version of the procurement documents will be submitted for ADB review and approval. ADB-approved procurement documents should be used as a model for all

procurement financed by ADB for the project, and need not be subjected to further review unless specified in the procurement plan, or required under special arrangements. Likewise, the initial bid evaluation reports and/or draft negotiated contracts will be submitted to ADB for concurrence. They will be reviewed on a post-facto basis once ADB confirms that prior submission is no longer required.

3. Consulting Services

77. Consulting services including CSO services (for WUCS mobilization and field support during Project-2) will be engaged following the ADB's Guidelines on the Use of Consultants²¹ (2013, as amended from time to time). Under the Program, they will be selected and engaged by PMU through quality and cost based selection (QCBS) method, using 90:10 technical to financial weightage.

78. Under the Program, PMU will also engage monitoring and evaluation consulting services (a lump sum contract) which will be through a firm, using QCBS (90:10 ratio). The firm will undertake baseline survey and follow up activities for benefits and effects monitoring at program mid-term and completion.

79. In addition to the above, (international and national) individual specialist will be engaged through individual consultant selection and individual consultant selection procedure to provide technical expertise for the AC-IWRM. For individual engagements, agreements acceptable for SGOK and ADB will be signed and kept on record as supporting documents of the reimbursement claims.

80. Single source selection can be adopted in case of specialist organizations for action research and training (such as piloting of IWRM activities). However, the value of such contracts shall not exceed US\$100,000. Adequate and acceptable justification will be required for such SSS.

a. E-Procurement

81. An eProcurement assessment consistent with requirements in Project Administration Instructions (PAI) 3.13 was done and adoption of eProcurement under the Project had been confirmed based on system assessment by ADB. KNNL's eProcurement systems are appropriate and consistent with the Procurement Guidelines and with the principles of economy, efficiency, transparency, and award of contract to the lowest evaluated priced, substantially responsive bid. It may be applied to the NCB, Limited International Bidding and Shopping modes of procurement. The use of eProcurement does not apply to recruitment of consultants.

82. Any bidder who might so choose must be allowed to obtain paper copies of bidding documents, and submit bids on paper, according to Clause 2.44 of the ADB Procurement Guidelines. Accordingly, KNNL's electronic procurement procedures must support parallel, paper-based procedures.

83. The use of electronic systems does not excuse deviation from any current accepted practices, except those specific to the electronic handling and management of bidding documents and bids. Opportunities may be advertised electronically, bidding documents may be

²¹ Checklists for actions required to contract consultants by method available in e-Handbook on Project Implementation at: <http://www.adb.org/documents/handbooks/project-implementation/>

issued electronically, correspondence may be electronic, and bids may be received electronically. All other requirements, such as use of standard bidding documents for ICB are retained.²²

C. Contract Management

84. The PMU shall forward to the ADB (sector division) two copies of each signed contract with a value of more than US\$100,000. For contracts US\$100,000 or less, the PMU shall forward copies of the signed contract to ADB only if requested.

85. The PIO will obtain necessary clearance for contract variations and report the same to PMU. The PMU shall also obtain ADB's approval for contract variations that are subject to ADB's prior review and would in aggregate increase the original value of the contract by more than 15% of the original amount. In case of any variation, approval / concurrence of the zonal Chief Engineer will have to be obtained before execution, by the relevant executive engineer of the subproject and inform the PMU on these developments. If variation is more than 15%, PMU shall obtain ADB prior.

86. Monitoring of performance under the various contracts shall be done as per the Management Information System for KISWRMIP, and will include the following:

- Monthly program status report
- Expenditure Statement
- Physical Progress Report
- Proposal for funding from different projects under different schemes, etc.

87. A Register of Contracts shall be maintained at PIO level with each contract identified by a unique number. The Register should record pertinent details including: (i) Title & Start and End Dates; (ii) Validity Period; (iii) Name of Contractor / Consultant / Supplier; (iv) Amount; (v) Variations if any; (vi) Time Extension if any. The PMU will monitor quarterly and annually through procurement plan.

88. Contracts will be managed by the concerned executive engineer of the PIO as per provision in the agreement. The relevant state guidelines as amended from time to time will be followed.

89. Payments to contractors shall be made as per the condition of the contract. However, every month at least one bill may be paid to the agency for civil works. For consulting services, the bills will be raised in the 1st week of the month for the proceeding months.

D. Consultant's Terms of Reference

90. Consulting services will provide technical support for program implementation. There will be three main consulting services packages: (i) PSC; (ii) IWRM; and (iii) services for monitoring and evaluation (including financial audit, environmental and effects monitoring). The PSC will be engaged for a period of 4 years for Project-1 and a separate PSC package for Project-2.²³ Firms will be recruited using the quality- and cost-based selection (QCBS) method.²⁴

²² More details are in the eGP System Assessment Report (supplementary documents—available upon request).

²³ The consulting firm for PSC for Project-1 may be re-engaged for Project-2 using single source selection subject to its satisfactory performance and availability of funds. Estimated cost of Project -2 is \$2.9 million.

The Program Support Consultancy will be required overall for a period of 7 years to be provided over the entire duration of the program. Recruitment will be undertaken in accordance with ADB's *Procurement Guidelines* (2013, as amended from time to time)²⁵ and ADB's *Guidelines on the Use of Consultants* (2013, as amended from time to time).²⁶ Firms will be recruited using QCBS with 90:10 (quality: cost ratio). The priority for PSC is quality outputs. Given the innovative approach of IWRM and the specialist expertise required, a 90:10 weighting will be used for technical and financial evaluation. A full technical proposal will also be required. The total international input will be for 47 person-months (p-m) and 217 p-m for national consultants. The overall requirement of the two packages (PSC and IWRM) is 264 p-m.

91. Project 1 should have adequate funds to cover the entire period so that one contract based on competitive selection may be awarded. Notwithstanding this, such information (possible re-engagement for subsequent Tranches subject to ADB approval) must be advised to all potential firms through the initial consulting services recruitment notice and RFP. In any cases, the initial contract closing date should be within the closing date of Tranche 1. The EA's decision (performance evaluation) whether to continue with the same firm or not must be made 3 to 6 months prior to the contract closing date in order to allow the EA sufficient time to start new recruitment process if so required, or contract variation maybe an alternative. During such contract variation process, the EA may ask for CVs and other necessary information and supporting documents from the firm for new Tranche specific inputs, for example new experts are required.

92. The total inputs required for PSC for Project-1 will be 230 person-months (p-m), including 20 p-m of international and 210 p-m of national consultants. Firms will be selected using QCBS with 90:10 (quality:cost ratio). For IWRM, 27 p-m of international individual consultants and 7 p-m of national consultants will be recruited by the AC-IWRM. The following table summarizes the required positions and briefly describes their scope of inputs.

Table 8: Program Support Consultancy - Summary Terms of Reference

Designation	Duration (p-m)	Responsibilities
International Consultants		
Irrigation Specialist / Team Leader	20	Provide regional best practices and experiences to guide, direct, manage and report on Team inputs and outputs; provide technical, administrative, and reporting support to the Program Director; assist with developing and operationalizing monitoring systems, preparing and delivering training; assist WRD & AC-IWRM on any required activities for basin planning. Assist program implementation offices establish robust operational practices for participatory irrigation system operation; develop monitorable indicators to ensure equitable delivery of irrigation water and develop and deliver training materials on technical aspects and participatory irrigation management (PIM). Plan and coordinate subproject design and other requirements for subsequent tranches of the MFF. These should all be based on relevant international and regional experiences and best practices.

²⁴ The priority for PSC is quality outputs. The innovative approach of IWRM and specialist expertise required, justifies a 90:10 weighting will be used for technical and financial evaluation.

²⁵ Available at: <http://www.adb.org/Documents/Guidelines/Procurement/Guidelines-Procurement.pdf>

²⁶ Available at: <http://www.adb.org/Documents/Guidelines/Consulting/Guidelines-Consultants.pdf>

Designation	Duration (p-m)	Responsibilities
Total (p-m)	20	
National Consultants		
Operation and Maintenance Specialist	32	Assist in developing project specific maintenance manuals for all levels of the irrigation system; assist with developing improved operation practices; ensure that systems operation is in response to WUCS requirement; develop training materials and deliver training.
Participatory Irrigation Management Specialist	48	Assist CADA / KNNL establish and operationalize project WUCS support systems; assist PMU / SIO in WUCS strengthening activities including training; develop appropriate training strategy and modules; assist PMU in managing and monitoring activities of field staff.
Water Institutions Specialist	32	Assist in strengthening state and field level institutions for PIM / CAD; support KNNL / CADA in improving systems to strengthen WUCS; and establish systems and assist KNNL in handing over system components to WUCS post modernization. Contribute to policy analysis by AC-IWRM
Environment Specialist	8	Assist the PIO in preparation of environmental safeguard documents as required to meet ADB safeguards policies. Facilitate in capacity building in environmental management and required environmental monitoring.
Agriculture Specialist	20	Assist the development of WUCS agriculture development plans, including land use management; and identify relevant agricultural innovations and practices that can be promoted at the field level for water use efficiency.
Social Development and Gender Specialist	24	Support international social development and gender specialist in planning and training activities for poverty reduction and gender inclusiveness; and assist PMU in social and gender activities and their monitoring.
Construction Specialist	18	Provide support for on-site monitoring of construction management/contract administration and report back to the Chief Engineer / Program Implementation Officer.
Communication Specialist	8	Plan and prepare range of communication materials mainly for dissemination of program information and specific awareness campaigns for WUCS and other water users.
Management Information Systems	8	Establish MIS database for program monitoring including key indicators for implementation progress and relating to program outcomes. Capacity building of staff and facilitate/review period updating.
Procurement Specialist	12	Provide support and capacity building in ADB procurement guidelines for preparation of bid documents, tendering and recruitment of services.
Total (p-m)	210	
Total (International and National)	230	

VII. SAFEGUARDS

A. Key Safeguard Documents and Responsibilities

93. The following safeguard documents were prepared for the Investment Program as per ADB's Safeguards Policy Statement (2009) (SPS) and the government rules:

- (i) Environmental assessment and review framework (EARF) dated June 2013;
- (ii) Initial environmental examinations (IEE) for Project 1 subproject (Gondi) dated June 2013;
- (iii) Environmental Management Plan dated June 2013;
- (iv) Resettlement framework (RF) dated June 2013;

94. The EARF and the RF serve to guide safeguard assessments and the preparation of relevant safeguard documents in all Projects of the MFF.

95. The safeguard frameworks cover Facility specific information and requirements in accordance with ADB's SPS: (i) the general anticipated impacts of the projects likely to be financed under the Facility on the environment, involuntary resettlement, and indigenous peoples; (ii) the safeguard criteria that are to be used in selecting 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; (iv) the institutional arrangements (including budget and capacity requirements) and Republic of India and ADB's responsibilities and authorities for the preparation, review and clearance of safeguard documents.

96. The State acting through KNNL is responsible for the overall compliance of all the requirements prescribed in Schedule 5 of the FFA and the safeguard frameworks that have been prepared with respect to the Facility (and are deemed incorporated herein by reference), during the processing and implementation of the investment program.

97. Pursuant to ADB's SPS 2009 (SPS),²⁷ ADB will not reimburse expenditure incurred on activities where the agreed Safeguard policy is not applied and or those activities described in the ADB's Prohibited Investment Activities List set forth in *Appendix 5* of the SPS. All institutions under the Program will ensure that their investments are in compliance with applicable national laws and regulations, and will apply the prohibited investment activities list to subprojects financed by ADB.

B. Environmental Safeguards

1. Safeguard concerns

98. Output 1 of the program focuses on institutional strengthening for IWRM and therefore has no environmental impacts. Under the first Project of the MFF and as part of output 2, canal modernization is to be undertaken for the Gondi irrigation subproject and flow measurement devices are to be placed in identified locations in the Bhadra canal system and throughout the K-8 (Tungabhadra) sub basin. Modernization works will comprise channel desilting and

²⁷ Available at: <http://www.adb.org/Documents/Policies/Safeguards/Safeguard-Policy-Statement-June-2009.pdf>

reshaping, lining and provision of canal structures. These will take place within the existing canal sections and there is no widening or extension expected.

99. Also, identified are activities to improve water use efficiency and agriculture productivity will be for Gondi. This will be through on farm improvements like command area development, high efficiency (drip) irrigation systems and small on-line and off-line storages (adjacent to irrigation canals). Projects 2 and 3 will comprise of canal modernization work for Vijayanagara Channels (VJN) and part of the Tungabhadra Left Bank Canal (TLBC).

100. An initial environmental examination (IEE)²⁸ has been prepared for the Gondi irrigation subproject which is categorized as an ADB environment Category B project. A short note has been prepared to guide the activities of Bhadra canal system and remaining sub-basin for installation of telemetry equipment. This is categorized as an ADB environment Category C project, not requiring an IEE or and environmental impact assessment. An EARF has also been developed for the MFF which will guide the program for environment actions for TLBC and VNC, and can also guide for any additional proposed activities within the sub-basin which may be included in subsequent Projects of the program.

101. According to the existing assessment there are unlikely to be any major adverse environment impact of the Project 1 subprojects and all identified impacts are likely to be managed through the EMP. Overall the program will have a positive environmental impact due to improved water resources management at the sub-basin level, reduction in habitat of disease vectors, reduced damage to houses and community infrastructure from waterlogging and increased agricultural productivity. These benefits are expected throughout the whole irrigation system. There are also other expected positive impacts and are discussed in greater detail in the project's EARF.

C. Social Safeguards

1. Social Safeguards: Involuntary Resettlement

a. Project Scope and Resettlement Impacts

102. An assessment for involuntary resettlement impacts has been made for Gondhi, VJN and TLBC irrigation subprojects. Project-1 is categorized as C for involuntary resettlement. This is since: (i) the project involves modernization of an existing canal system within the existing right-of-way, and (ii) the WRD already owns the right of way of 5 meters alongside the canals for facilitating maintenance works and for access. There will be no land acquisition or other losses resulting in involuntary resettlement under Project-1. A resettlement framework²⁹ has been prepared for the entire MFF pursuant to SPS that will be followed for the subsequent Projects.

D. Indigenous Peoples

103. ADB SPS defines IPs as “a distinct, vulnerable, social and cultural group possessing the following characteristics in varying degrees: Self-identification as members of a distinct indigenous cultural group and recognition of this identity by others; Collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories; Customary cultural, economic, social, or political

²⁸ Initial Environmental Examination (accessible from the list of linked documents in Appendix 2).

²⁹ Resettlement Framework (accessible from the list of linked documents in Appendix 2).

institutions that are separate from those of the dominant society and culture; and A distinct language, often different from the official language of the country or region.”

104. Project-1 is categorized as C for the indigenous peoples safeguard. There are no indigenous peoples as defined by SPS in any of the areas of Project-1 and subsequent projects under the investment program. As these would also be categorized as C, an Indigenous Peoples Planning Framework has not been prepared.

VIII. GENDER AND SOCIAL DIMENSIONS

A. Summary Poverty Reduction and Social Strategy (SPRSS)

105. The poverty reduction and social strategy under the program is aligned with the Eleventh Five Year Plan (2007-2012) and draft Twelfth Five Year Plan (2012-17); Planning Commission, Government of India and ADB Strategy 2020³⁰ on promoting inclusive growth and achieving rural poverty reduction through strengthening the rural infrastructure services. The program focuses on adopting pro-poor and gender inclusive mechanism within the overall design. It aims at providing enhanced water accessibility and equity to water users within a sub-basin and specifically for agricultural and household purposes. The program will improve equity of water distribution to directly benefit tail-end farmers, marginal, small and landless farmers, and the poor and vulnerable women.

106. Program interventions will have positive impacts on the women and socially excluded groups in terms of (i) strengthened grassroots institutions; (ii) improved irrigation infrastructure and practice; (iii) improved and equitable access to water by small, marginal and landless farmers; (iv) improved farm incomes; (v) enhanced off farm livelihood opportunities (vi) sustainable and innovative irrigation and agricultural practices, including drip and micro irrigation and crop diversification; (vii) strengthened water resources and environmental management; (viii) social inclusion and in water governance and decision-making processes and (ix) awareness generation, community mobilization and participatory irrigation management.

B. Gender Action Plan (GAP)

107. The program is classified as Category II: effective gender mainstreaming, (EGM) following ADB's gender categorization of projects (ADB's Policy on Gender and Development 1998 and ADB's Gender Mainstreaming Criteria Guidelines; 2010). The gender strategy will mainstream women in the context of irrigation management. Specific activities for women will include: (i) provision of capacity building for technical staff of WRD in IWRM topics. The program will ensure training of at least 600 WRD staff of which about 30% (200) will be women; (ii) WUCS management boards will have about 30% representation of women (from current 20%) which will increase the role of women in decision making process pertaining to water resources management; and (iii) gender specific capacity building in women in water management, women's leadership and role in WUCS. The PSC will include a Social Development and Gender Specialist for 45 p-m and each field support services team for WUCS strengthening will comprise one female community organizer. A gender action plan is provided at Table 9.

³⁰ ADB. 2008. *Strategy 2020: The Long-Term Strategic Framework of the Asian Development Bank, 2008–2020*. Manila.

Table 9: Gender Action Plan (Gondi Subproject—Project 1)

Activity	Indicators/Targets	Responsibility	Time Schedule
Output 1. State and Basin Institutions Strengthened for IWRM			
Develop the capacities of WRD staff including women in IWRM	Certified training programs focused on IWRM conducted for 200 no. of WRD staff (T: about 75 female staff)	WRD/PMU/PIOs	Year 2
Output 2. Irrigation system infrastructure and management modernized			
Build awareness of women's equal rights and participation in water resources management and livelihood improvement	Partnerships with nongovernment organizations developed to conduct sensitization and community mobilization campaigns on women's participation in water users cooperative societies (WUCS), participatory irrigation, crop diversification and management, and agriculture extension services	WRD/PMU/PIOs/NGO (s)	Year 2
	9 sensitization workshops focusing on gender equality and social inclusion (GESI) approaches and women's role and participation in water resources management and farm/off farm livelihood activities conducted for WUCS members of Gondi subproject area (T: M–100; F–50)	NGO(s)/PIOs	Year 2–3
	2 training programs focused on social leadership development, decision– making and promotion of women's participation in WUCS conducted for women directors of WUCS in the Gondi subproject area (T: 20 women directors)	NGO(s)	Year 3
	About 30% of WUCS management board members are women (T: M– 150; F–50)	PIOs	Year 1–2
Develop and implement training modules for increased	20 training programs focused on PIM conducted in the Gondi subproject area resulting in the increased access to water for cropping and domestic use especially by tail end, small and	PMU/PIOs/NGO(s)	Year 2–4

Activity	Indicators/Targets	Responsibility	Time Schedule
women's participation in irrigation management and value added livelihood activities	marginal, and women farmers/households (T: M-500; F-500)		
	50 WUCS (including women and men) strengthened and training and marketing support provided to micro-enterprises and livelihood clusters [farm/off-farm] (Target: M-1,000; F-1,000)	PMU w/ support of relevant training institutes/departments	Year 2-4
3. Program and management systems operational			
Improve the knowledge of relevant government departments on GESI approaches in agriculture, irrigation and water resources management	3 training workshops conducted for women/men staff of key departments focusing on GESI concepts and in the design and implementation of water resources management, irrigation and agriculture programs for vulnerable populations, including women (T: F-30; M-70)	PMU	Year 1
Monitor progress of gender and socially inclusive focused activities in water resources management	Project management information system with gender indicators	PMU/PIOs	Year 1-4
	Sex-disaggregated data collected, analyzed and key findings disseminated to address implementation gaps	PMU/PIOs	Year 4-5

Note: The Gender Action Plan is subject to further revisions post consultations with Asian Development Bank and State Government of Karnataka

F = female, GESI = gender equality and social inclusion, IWRM = integrated water resources management, M = male, NGO = nongovernment organization, PIM = participatory irrigation management, PIO = project implementation office, PIU = project implementation unit, PMU = project management unit, T = target, WRD = Water Resources Department, WUCS = Water Users Cooperative Society

IX. PERFORMANCE MONITORING, EVALUATION, REPORTING AND COMMUNICATION

A. Program/Project Performance Monitoring

108. During the course of program implementation, monitoring will be carried out for: (i) periodic progress reporting; (ii) safeguard monitoring; (iii) benefit monitoring and evaluation; and (iv) financial management monitoring. The Project-1 and program DMFs will be the basis for monitoring progress.

109. **Periodic progress monitoring.** The PMU will prepare periodic progress reports based on loan implementation. Specifically the following reports will be required:

1. Inception report (draft submitted within 2 months of mobilization and finalized within 3 months of mobilization);
2. Quarterly progress reports (within 30 days of the end of each quarter)
3. Annual report (within 30 days of the end of each calendar year)
4. Midterm report (middle of year 2 for Project-1)
5. Project completion reports (draft submitted 3 months prior to Project completion and finalized within 3 months after Project completion)

110. **Compliance and Safeguard monitoring.** Monitoring of compliance (including the monitoring of policy, legal, financial, economic, and other covenants) and safeguard issues (including the monitoring of social and poverty action plans), will be undertaken by the PIO and reported in the MIS database. The main aim will be for the PIO to ensure that the Project is implemented with due concern for safeguards and quality and specifically to ensure that these issues are adequately addressed to the requirements of SGOK and ADB. This will include: (i) environmental quality monitoring of water and soil quality parameters (as referred to in the IEE and EARF) which will be undertaken periodically by a specialist firm and reported to the PMU through PIO; (ii) gender mainstreaming; (iii) potential resettlement impacts like compensation for loss of income; and (iii) quality of work necessary to ensure sustainable outputs.

111. **Gender and social dimensions monitoring.** Monitoring and quarterly reporting of gender and social dimensions will be the responsibility of the social development specialist of the PSC. The program GAP sets out the gender monitoring indicators and targets for each project component. Further, all data on staffing and recruitment, participation, consultation, wages, training, safeguards implementation and compensation, and impacts will be sex disaggregated. GAP implementation progress updates (in a table format) will be included in the project quarterly progress reports). A management information system (MIS) will be established accordingly at Project-1 start up to ensure data is stored and managed well for monitoring.

112. **Effects Monitoring.** During the PPTA, a socioeconomic baseline survey was undertaken for Gondi subproject. An approximate of 3.6% sample households (equivalent of 100 households) to the total households of the command area was taken up for the study. This may be expanded to a larger sample as part of the comprehensive baseline survey which will be used for monitoring project outcome and impact and periodic monitoring. Similarly, a baseline survey will be undertaken as part of the feasibility stage for subsequent subprojects in Project-2. A final effects monitoring will be undertaken for Project-1 (in April 2017) prior to its completion. Similarly, prior to program completion another effects monitoring and evaluation will be undertaken (in October 2020) for all subprojects developed under the program. A specialist

entity (including academic institute) will be recruited for expansion of the baseline survey and effects monitoring and evaluation at various stages of program implementation (see Appendix 8 for draft terms of reference).

113. For monitoring and evaluation, there will be two separate consulting services required: (i) environmental monitoring within the sub-basin, and (ii) baseline and effects monitoring surveys at midterm and program completion. An impact evaluation study is planned to demonstrate outcomes and impacts of the planned investment, for which a baseline study will be undertaken in November 2014.

114. As part of the program performance management system (PPMS), Project-1 will develop a comprehensive management information system (MIS) database which will incorporate output-1 parameters for IWRM with those of output-2 for infrastructure modernization and WUCS strengthening. The same firm will also undertake effect monitoring and evaluation will provide periodic progress updates based on the MIS and baseline data.

115. A separate MIS database will be established within the PMU for financial management monitoring.

116. PSC MIS specialist will establish an MIS database for program monitoring including key indicators for implementation progress and relating to program outcomes. Capacity building of staff and facilitate/review period updating. This will not be overly cumbersome and will collect poverty and gender-disaggregated data. Within 6 months of loan effectiveness, the PMU will submit a detailed implementation monitoring plan to ADB for review and concurrence by ADB. Financial performance monitoring and review, including spot checks, will be conducted from time to time and will be carried out by ADB loan administration missions.

117. During the course of program implementation, the PPMS will be further fine-tuned as needs are recognized. Project performance monitoring will be undertaken by PD with the support of the PSC. The PIO will provide the PMO with quarterly reports on their: (i) activities; (ii) compliance with safeguard requirements; and (iii) progress toward output targets. The PMU will consolidate these in a quarterly progress report (QPR) that will be finalized and circulated to ADB, WRD and through WRD, to the state IWRM and program steering committees. QPRs will be circulated within one month of the end of the reporting quarter.

B. Evaluation

118. The PD will facilitate (at least) six monthly reviews by ADB and the Government. The reviews will (i) examine the continuing appropriateness of implementation arrangements; (ii) examine activity schedules with particular concern for progress towards IWRM targets and institutional strengthening parameters like capacity building and construction standards and quality of works implementation; (iii) review compliance with agreed procurement procedures; (iv) analyze progress and success of capacity building and training programs; and (v) monitor the effectiveness of safeguard procedures. A comprehensive mid-term review will be undertaken within 24 months of loan effectiveness to identify any problems and constraints encountered, and assess any need for modification of the Project-1 scope and financing and/or implementation arrangements.

119. Three months before Project completion, the PIC will produce a draft Project Completion Report (PCR) for Project -1 which will be finalized during the last month of the Project. This will be following the receipt of comments from SGOK and ADB received by the start of that final

month. The PCR content will detail the lessons of Project-1 implementation for the guidance of future similar activities. Within 6 months of physical completion of the Project-1, KNNL will submit a draft project completion report to ADB and DEA who would review and submit their comments for incorporation in the final report. The procedure will be followed for Project-2.

C. Reporting

120. PMU will provide ADB with: (i) QPRs in a format consistent with ADB's PPMS; (ii) consolidated annual reports including (a) progress achieved by output as measured through the indicator's performance targets, (b) key implementation issues and solutions; (c) updated procurement plan and (d) updated implementation plan for next 12 months; and (iii) a PCR within 6 months of physical completion of the Project-1. To ensure projects continue to be both viable and sustainable, project financial statements and the executing agency's audited financial statements, together with the associated auditor's report, should be adequately reviewed.

D. Stakeholder Communication Strategy

121. A comprehensive stakeholder analysis and strategy has been prepared for the program. This was developed on the basis of a thorough stakeholder analysis and consultations during program preparation (see Appendix 9). The main tools for communication and program awareness raising are tabulated below:

Written	Verbal	Visual
Education / Training Material	Folk Theatre / Folk Art Form	Film / Electronic Media Campaign
Pamphlet / Brochure / Newsletter / Presentation	Public Meeting / Campaign / Public Briefing	Display / Poster
Website / Blog / Group Email / Social Network Sites	Groups Discussion / Stakeholder Interview / Personal Contact	Exhibition / Fair
Study Report / Case Study / Working Paper / Technical Note	Workshop / Seminar / Consultation Meeting	
Press Release / Advertisement	Media Briefing	
Site Announcement Sign	Site Visit / Exposure Visit	
Letter / Email / Memo / Notice		
Policy / Legislation / Government Order		
Agreement / Contract / Memoranda of Understanding		
Action Taken Report		

122. Specifically, the strategy will be two-pronged: (i) at headquarters: AC-IWRM and KNNL will establish program websites to disseminate information regarding the program objectives, progress and any events etc. The AC-IWRM has a comprehensive communications strategy as part of the IWRM road map and this will be followed; and (ii) at subproject level: PIO will

establish a subproject specific information site which may also be used for addressing complaints as part of the grievance redress mechanism, For WUCS strengthening, communications will be rigorous as part of the social mobilization process and will include, workshop, training, focus group discussions etc.

123. One-day workshops will be held annually at each of the Project's subproject site where work is planned, ongoing or recently completed. These workshops will be organized by the PIOs with support of PSC and PMU.

124. Public notification of subproject milestones and safeguards, as well as progress towards these milestones and measures taken to impose safeguards will be posted on both KNNL/PIO and ADB websites, and will be displayed prominently in hard copy at a central location within the subproject.

X. ANTICORRUPTION POLICY

125. The Government, State, KNNL, and AC-IWRM are advised of ADB's Anticorruption Policy (1998, as amended to date). Consistent with its commitment to good governance, accountability and transparency, implementation of the Projects under the Facility shall adhere to ADB's Anticorruption Policy. ADB reserves the right to review and examine, directly or through its agents, any alleged corrupt, fraudulent, collusive, or coercive practices relating to the Projects under the Facility. In this regard, investigation of Government officials, if any would be requested by ADB to be undertaken by the Government. To support these efforts, relevant provisions of ADB's Anticorruption Policy are included in the Loan Regulations, Loan Agreement and the bidding documents. In particular, all contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the project executing agency and implementing agencies, and all contractors, suppliers, consultants, and other service providers as they relate to Projects under the Facility. Individuals/entities on ADB's anticorruption debarment list are ineligible to participate in ADB-financed activity and may not be awarded any contracts under the Projects.

126. The government will ensure that (i) KNNL conducts periodic monitoring inspections on all contractors' activities related to fund withdrawals and settlements; and (ii) all contracts financed by ADB in connection with the project include provisions specifying the right of ADB to audit and examine the records and accounts of KNNL and all contractors, suppliers, consultants and other service providers as they relate to the project.

127. ADB's Anticorruption Policy designates the Office of Anticorruption and Integrity (OAI) as the point of contact to report allegations of fraud or corruption among ADB-financed projects or its staff. OAI is responsible for all matters related to allegations of fraud and corruption. For a more detailed explanation refer to the Anticorruption Policy and Procedures. Anyone coming across evidence of corruption associated with the project may contact the Anticorruption Unit by telephone, facsimile, mail, or email at the following numbers/addresses:

by email at integrity@adb.org or anticorruption@adb.org

by phone at +63 2 632 5004

by fax to +6326362152

by mail at the following address (Please mark correspondence Strictly Confidential):

Office of Anticorruption and Integrity

Asian Development Bank
6 ADB Avenue Mandaluyong City
1550 Metro Manila, Philippines

XI. ACCOUNTABILITY MECHANISM

128. People who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make a good faith effort to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.³¹

XII. RECORD OF FAM CHANGES

129. The first draft of FAM has been prepared and agreed upon at the loan fact-finding. All revisions/updates during the course of implementation will be retained in this Section to provide a chronological history of changes to implementation arrangements recorded in the FAM.

³¹ For further information see: <http://www.adb.org/Accountability-Mechanism/default.asp>.

INTEGRATED WATER RESOURCES MANAGEMENT ROADMAP

Key IWRM Theme	Definition and Activities	Program Objectives	Responsibilities	Timing
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"> (i) Establishment of effective river basin management arrangements including financing arrangements; (ii) Preparation of State River Basin Inventory; (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; (iv) Preparation of pilot, community based, integrated Land and Water Management Plans in selected sub-basins and/or irrigation areas; (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 (vi) Implementation of public awareness, information education and communication systems and campaigns on relevant water sector issues. 	<ul style="list-style-type: none"> (i) Access for all people in the basin to adequate water supply and sanitation (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 (iii) River basin planning is transparent, integrative, consultative, effective, and uses information based systems including modelling and spatial data (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 (v) Agreed policies, rules, and operational procedures including monitoring to implement river basin plans and water use by different sectors are implemented effectively 	<p>AC – IWRM WRD WRDO Directly involved stakeholders: CWC, WRA, TB, KNNL, other nigams, DMI, CADA, DA, DE, DF, DMG, WD, KUWSDB, WUCS; local government, civil society</p>	August 2021

Key IWRM Theme	Definition and Activities	Program Objectives	Responsibilities	Timing
2. Institutions and Policies for IWRM	<p>“Institutions” is used in its broadest sense 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"> (i) Organizational alignment for IWRM processes with interim arrangements initially for selected river basins (ii) Organizational capacity building for IWRM processes, including career development and reward systems (iii) Alignment and implementation of legislative framework (iv) Preparation of a State IWRM Strategy to and development of water resources policies aligned with economic, social and environmental objectives (v) Regulation (such as sustainable water utilization, wastewater discharge and water tariff approaches) (vi) Institutional development for participatory irrigation management (PIM) including formation and strengthening water user committees (vii) Capacity building of staff of agencies including IWRM Certification Program 	<ul style="list-style-type: none"> (i) AC-IWRM recognized as an international standard think tank providing advice to SGOK (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 (iii) National and international IWRM research and policy partnerships established with AC-IWRM providing access to state-of-art knowledge (iv) State IWRM Strategy in place and regularly updated and guiding strengthening of water sector governance (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 (vi) Decision makers, advisers, technical experts, and other key stakeholders effectively carry out their responsibilities with regard to water resources policy, planning and management (vii) Policy makers and other stakeholders knowledge and willingness raised to undertake necessary reform measures 	<p>AC-IWRM WRD CADA Directorate Directly involved stakeholders: CWC, WRA,</p>	August 2021

Key IWRM Theme	Definition and Activities	Program Objectives	Responsibilities	Timing
		(viii) Capacity of WRD and water 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"> (i) Preparation of a Strategy and Plan for Strengthening the Water Resources Information System; (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; (iii) Hydrological monitoring in the K-8 and other priority river basins; (iv) Data archiving and management, including the collation of data from various sources, validation, computerization, and so on; (v) Data sharing and dissemination among government agencies, research establishments, and providing public access to data; (vi) Identification, development and implementation of appropriate decision-support tools, including geographic information systems, hydrologic and hydraulic models, and other analytical tools; and (vii) Research to increase knowledge in such fields as catchment processes, demography, etc., as well as new technologies for water conservation 	<ul style="list-style-type: none"> (i) IWRM and river basin planning and policies are based on strong data and information sources and decision support systems (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 (iii) Agencies concerned with water management monitor and record water resources to agreed standards and according to their responsibilities (iv) Effective data-sharing arrangements in place among agencies and stakeholders in the basin and with central agencies including data sharing agreements (v) Research programs are providing highly relevant information to support IWRM 	<p>AC-IWRM WRDO KNNL, other nigrams, Directly involved stakeholders: CWC, DPS, DITB; DeG; DMI, DA, DE, DF, DMG, WD, KUWSDB</p>	August 2020

Key IWRM Theme	Definition and Activities	Program Objectives	Responsibilities	Timing
	and environmental protection.			
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"> (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; (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; (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; (iv) Operating and maintaining infrastructure including timely and volumetrically based water supply, asset management and full recovery of at least O&M costs; (v) Capacity building of both system operations staff and water user 	<ul style="list-style-type: none"> (i) All water supply infrastructure capable of operating at design capacity (ii) Sustainable asset-management practices in place for all water-related infrastructure in the basin (iii) Institutions managing the infrastructure, volumetric supply of irrigation water to users and cost recovery of O&M at government, water authority and WUCS levels (iv) Reliable delivery of irrigation services within the constraints of available water resources (v) Commitment of involvement of water users in planning and management of irrigation systems 	<p>KNNL and other nigrams CADA Directorate</p> <p>Directly involved stakeholders: DA, WUCS</p>	August 2021

Key IWRM Theme	Definition and Activities	Program Objectives	Responsibilities	Timing
	organisations; and (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"> (i) Development of the concepts and understanding of water productivity, water use efficiency, crop and agricultural productivity and their practical application to IWRM (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. (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 	<ul style="list-style-type: none"> (i) River basin and water resources planning treats the water resource as finite (ii) Increased provision of water for irrigation or industry expansion is based on real water savings. (iii) Modernisation of irrigation systems is based on comprehensive assessments of system configuration and conditions (iv) The interests of farmers of increased profitability is recognised in irrigation and water resources planning 	AC-IWRM KNNL and other nigams CADA Directorate Directly involved stakeholders: DA, DITB	February 2021
6. Stakeholder involvement and	Engagement of relevant stakeholders in planning and implementation, monitoring and evaluation of water resources	(i) Communities in selected basins are aware of and actively participate in the conservation,	AC-IWRM KNNL and other nigams	August 2021

Key IWRM Theme	Definition and Activities	Program Objectives	Responsibilities	Timing
Capacity Building	<p>management is a key “foundation” of IWRM. 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"> (i) Education, awareness raising, and capacity building of communities and individuals on water management issues; and (ii) Community involvement in river basin planning and management, irrigation modernisation, and Land and Water Management Plan programs. 	<p>utilization, and protection of natural resources</p> <ul style="list-style-type: none"> (ii) Communities are actively involved in deciding levels of services and water tariffs by water management utilities (iii) Local communities are actively participating in forums for planning and managing basin water resources (iv) Government commitment to stakeholder and community participation in river basin planning, water resources management and irrigation system management 		

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.

DESIGN AND MONITORING FRAMEWORK FOR THE INVESTMENT PROGRAM

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

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>Assumption</p> <p>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									
Activities with Milestones			Inputs (\$ million)								
<p>1. State and basin institutions strengthened for IWRM</p> <p>1.1 Complete institutional and/or capacity assessment (WRD, KNNL, AC-IWRM) (November 2014)</p> <p>1.2 Appoint staff for AC-IWRM (November 2014)</p> <p>1.3 Implement IWRM certification program (September 2015)</p> <p>1.4 Prepare river basin resources inventories prepared (May 2017)</p> <p>1.5 Endorse State IWRM strategy by IWRM steering committee (May 2019)</p> <p>1.6 Establish water resources system and use for river basin planning (September 2020)</p> <p>1.7 Complete pilot projects for land and water management, remote sensing of water consumption, water use efficiency, and water productivity (March 2021)</p> <p>1.8 Prepare river basin plans and implement in three subbasins (August 2021)</p> <p>2. Irrigation system infrastructure and management modernized</p> <p>2.1 Identify location for telemetry systems throughout subbasin (July 2014)</p> <p>2.2 Initiate civil works for Gondi irrigation subproject (April 2015)</p> <p>2.3 Prepare feasibility studies and detailed project reports for Vijaynagara and TLBC irrigation subprojects (before May 2015)</p>			<table><tr><td>ADB (Loan)</td><td>150.0</td></tr><tr><td>Government</td><td>70.0</td></tr><tr><td>Beneficiaries</td><td>5.0</td></tr><tr><td>Total</td><td>225.0</td></tr></table>	ADB (Loan)	150.0	Government	70.0	Beneficiaries	5.0	Total	225.0
ADB (Loan)	150.0										
Government	70.0										
Beneficiaries	5.0										
Total	225.0										

Design Summary	Performance Targets and Indicators with Baselines	Data Sources and Reporting Mechanisms	Assumptions and Risks
<ul style="list-style-type: none"> 2.4 Initiate civil works for Vijaynagara and TLBC irrigation subprojects (May 2016) 2.5 Prepare main system asset management and operation and maintenance plan for all irrigation subprojects (May 2020) 2.6 Install telemetry systems throughout selected subbasins (May 2021) 2.7 Complete capacity building of 110 WUCSs and sign service agreement with KNNL at Vijaynagara and TLBC irrigation subprojects (August 2021) <p>3. Program management systems operational</p> <ul style="list-style-type: none"> 3.1 Fully staff PMU and PIO with an appointed project director by loan effectiveness (October 2014) 3.2 Operate program MIS 3 months after project 1 effectiveness (December 2014) 3.3 Procure all required equipment (December 2014) 3.4 Recruit PSC and monitor within 6 months of loan effectiveness (December 2014) 3.5 Meet annual disbursement projections (commencing May 2015) 3.6 Submit periodic financing for project 2 (August 2015) 3.7 Complete midterm effects monitoring (January 2018) and investment program effects monitoring (May 2021) 			

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.

PROJECT-1 ACTIVITIES

1. The Project–1 of KISWRMIP will support the initial progress in introducing IWRM by (i) commencing the strengthening of relevant institutions, specifically the AC-IWRM, for advancing policy review, river basin planning, water resources information systems establishment, and (ii) modernization of irrigation system infrastructure and management on one irrigation subproject (Gondi irrigation subproject, which was appraised prior to the PFR submission), including WUCS strengthening. The expected outcome will be river basin plan for Krishna-8 (K-8) sub-basin successfully implemented. Project 1 will have outputs as described below:

- a. Output 1: State and basin institutions strengthened for IWRM—this will initiate IWRM activities including river basin planning, establishing water resources information systems, policy enhancements, capacity building of water professionals in IWRM, land and water management planning and preparation of river basin inventories. The specific activities will include:
 - (i) operationalize the AC-IWRM: ensure it is fully staffed with national and international specialists and support staff and; that suitable office space and facilities are provided to functionalize the AC-IWRM;
 - (ii) prepare in the inception period, an initial training and capacity building plan;
 - (iii) commence the IWRM certification process which will be undertaken by an accredited agency like UNESCO-IHE and commence the capacity building of professional staff in IWRM;
 - (iv) investigate an IWRM based Water Resource Information and Knowledge System (WRIS) and in tranche;
 - (v) initial spatially based inventory of river basins in Karnataka;
 - (vi) preparation of River Basin Plan for Tungabhadra (K-8) River Basin;
 - (vii) develop and pilot concepts and build understanding of water productivity, water use efficiency, crop and agricultural productivity.
- b. Output 2: Irrigation system infrastructure and management modernized—this will undertake
 - (i) modernization of irrigation infrastructure on the Gondi subproject and installation and operation of telemetry systems for irrigation subprojects and within the sub-basin;
 - (ii) strengthen asset management and main system operation and maintenance (O&M) for Gondi irrigation subproject, with the establishment of a performance benchmarking system and capacity building of KNNL and CADA in improved irrigation systems operation, maintenance and management;
 - (iii) institutional capacity building for KNNL (project management unit and project implementation office) in financial management, procurement and project management
 - (iv) capacity building of up to 10 water user cooperative societies (WUCS) with women representation within the command area of Gondi irrigation subproject; for (a) improved operation, maintenance and participatory irrigation management; (b) women leadership and engagement in

- decision making in WUCS and water governance; (c) improved agricultural practices
 - (v) command area development activities including provision of field channels, high efficiency irrigation systems and introduction of system of rice intensification.
- c. Output 3: Project and management systems operational—the output will establish operational requirements for project implementation and management. This will specifically include:
 - (i) establish a fully staffed PMU and PIO for Gondi irrigation subproject with suitable office facilities and operational support;
 - (ii) recruit program support consultants and other services required for financial management, environment and effects monitoring;
 - (iii) procure all required equipment including telemetry for subprojects and sub-basin
 - (iv) prepare annual projections for contract awards and disbursements and commence disbursements
 - (v) establish Program management information system, financial management and environmental monitoring databases
 - (vi) commence periodic reporting including, quarterly and annual reports
 - (vii) commence periodic effects monitoring and reporting

DESIGN AND MONITORING FRAMEWORK FOR THE PROJECT-1

Design Summary	Performance Targets/Indicators	Data Sources/ Reporting Mechanisms	Assumptions and Risks
Impact Integrated water resources management in selected river basins in Karnataka successfully implemented	By 2021: State water resources management strategies institutionalized Systems for quantitative water use by sectors established (from 2018) 99 out of 110 WUCS confirm receipt of water service (baseline = 0)	WRD/KNNL annual reports and scheme monitoring reports WRA annual reports AC-IWRM annual report and State annual budget report WRD/KNNL annual reports and scheme monitoring reports	Assumption Continued political and community/stakeholder support at the national level to sustain and proceed with reforms
Outcome River basin plan for Krishna-8 (K-8) subbasin successfully implemented	By 2018: Institutional arrangements for river basin management in the K-8 sub-basin are established (currently none)	River basin management meeting minutes	Assumption Interstate water agreements are maintained.
Outputs 1. State and basin institutions strengthened for IWRM	By 2018: At least 200 WRD staff (of which about 75 are women staff) are certified in IWRM (baseline = 0)	WRD/KNNL reports and minutes	Assumption Certified WRD staff remain in office
2. Irrigation system infrastructure and management modernized	By 2018: 123 km of irrigation canal upgraded at Gondi irrigation subproject Gondi irrigation subproject main-system asset management (operation and maintenance) plan developed (baseline = 0)	WRD/KNNL annual reports and scheme monitoring reports WRD/KNNL annual reports and scheme monitoring reports	Assumption State government continues to support irrigation management transfer and WUCS collecting irrigation service fees

Design Summary	Performance Targets/Indicators	Data Sources/ Reporting Mechanisms	Assumptions and Risks
	Telemetry systems operational for at least 100 locations within the sub-basin At least 7 WUCS operating and maintaining transferred systems (baseline = 0) At least 7 WUCS have 30% representation of women on management boards	WRD/KNNL annual report CADA annual report CADA annual report	
3. Project and management systems operational	KNNL approves annual work plan within 30 days of receipt PMU is operational Contract award and disbursement project versus actual	KNNL annual report Government notification of PMU establishment and staffing Quarterly disbursement and contract award projections and financial reports prepared by WRD/KNNL	Assumption Counterpart staff appointment to the project is retained
Activities with Milestones 1. State and basin institutions strengthened for IWRM 1.1 Complete institutional capacity assessment (WRD/KNNL/AC-IWRM) (November 2014) 1.2 Appoint staff for AC-IWRM (November 2014) 1.3 Implement IWRM certification program (September 2015) 1.4 Prepare river basin resources inventories (May 2017) 1.5 Use water resources information system (May 2019) 2. Irrigation system infrastructure and management modernized 2.1 Initiate bidding process for civil works of Gondi irrigation subproject (Dec 2013) 2.2 Identify location for telemetry systems throughout sub-basin identified (July 2014) 2.3 Award civil works for Gondi irrigation subproject (November 2014) 2.4 Initiate civil works for Gondi irrigation subproject (April 2015) 2.5 Install telemetry systems at Bhadra irrigation subproject (May 2016) 2.6 Prepare main system asset management and operation and maintenance plan (May 2020) 3. Program Implementation 3.1 Fully staff PMU with an appointed PD by loan effectiveness (October 2014) 3.2 Operate program MIS 3 months after Tranche-1 effectiveness			Inputs (\$ million) ADB (Loan) 31.0 Government 16.6 Beneficiaries 0.4 Total 48.0

Design Summary	Performance Targets/Indicators	Data Sources/ Reporting Mechanisms	Assumptions and Risks
	(December 2014) 3.3 Recruit PSC and monitor within 6 months of loan effectiveness (December 2014) 3.4 Meet annual disbursement projections met (annually commencing May 2015) 3.5 Submit periodic financing for Project-2 (August 2015)		

AC-IWRM = Advanced Centre for Integrated Water Resources Management, ADB = Asian Development Bank, CADA = Command Area Development Authority, IWRM = integrated water resources management, km = kilometer, KNNL = Karnataka Neeravari Nigam Limited, MIS = management information system, PD = Project Director, PMU = project management unit, PSC = Project Support Consultant, WRD = Water Resources Department, WUCS = Water User Cooperative Society

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

Source: Asian Development Bank.

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 Framework and the Resettlement Framework, and efforts to minimize land acquisition and resettlement in the planning and design process; and
 - (g) 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),¹ draft indigenous peoples development plan, and draft environmental assessment.²
- (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.

¹ 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.

² 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.

SUBPROJECT IMPLEMENTATION METHODOLOGY

Irrigation Planning and Implementation—Main Activities and Responsibilities

	Activity	Main responsibility	Follow-up
1	Awareness Campaign		
	Information dissemination throughout Project target area	PIO, SST with WUCS support	
	Preparation of water awareness materials including modernization under IWRM approach in Kannada	PSC, PIO, SST with WUCS support	
	Preparation for folk play (Bayalu Nataka)	PSC, PIO with SST	
	Enactment of open theater play	PIO to engage and monitor and SST to facilitate	
	Materials on sub project and sub basin in Kannada	PSC and PIO and SST to assist	
	Village consultation meetings	SST	
	Main system walk through/feedback survey (to be undertaken before construction and during construction)	PIO/PSC, SST and WUCS	PMU/PSC on technical design components
2	Training Designs		
	Preparation of WUCS Benchmark Formats	PIO, SST with WUCS support and with inputs from PSC	
	Benchmark survey	SST with WUCS support	To submit filled in formats to PIO
	Preparation of training modules and methods on various items like WUCS roles, responsibilities, financial management based on Karnataka Irrigation Act, Karnataka Command Area Act & Karnataka Cooperative Act, its rules and regulations MOU and handing over,	PSC, PIO and SST with the involvement of WUCS	
	Irrigation Management	PSC, PIO and SST with the involvement of WUCS	
	Water Management in different cropping systems	PSC, PIO and SST with the involvement of WUCS	
	SRI Paddy, Farm Mechanizations and field visit a. SRI (Paddy) method of cultivation b. Farm mechanization c. Exposure visits	PIO and SST with the involvement of WUCS and inputs from PSC	
	Improved Cropping Systems a. Crop Intensification Soil testing and its importance, b. INPM, Bio-pesticides and Bio-fertilizers, d. Organic farming	PIO and SST with the involvement of WUCS	
	WUCS as multi-purpose organization	PSC, PIO and SST with the involvement of WUCS	
	Training modules checked & approved	PMU	PMU reviews and endorse training modules
	Publication of training modules and other support materials	PIO	
3	Community Mobilization	SST with WUCS support	PIO to monitor
4	Management Information System of Project (Kannada and English) a) Project b) Canal Network, c) Organizational structure of KNNL/CADA/WUCS Agriculture profile	PIO and SST with WUCS support and inputs from PSC	
5	MIS of WUC (Kannada and English)	PIO and SST with WUCS support	
6	Records/Book Keeping (Kannada)	PIO and SST with WUCS support	

	Activity	Main responsibility	Follow-up
7	Work Book Formats Preparation and Printing	PIO and SST with WUCS support and inputs from PSC	
8	Performance Indicators and Participatory Situation Analysis Charts in Kannada	PSC, PIO and SST with WUCS support	
9	Materials on Measuring Devices in Kannada and English	PSC, PIO and SST with WUCS support	
10	Compendium of Government Orders related to Irrigation and WUCS in Kannada	PMU	
11	Flood Management Guidelines	PSC, PIO and SST with WUCS support	
12	Ground water mapping and Conjunctive Use	PMU, PIO and SST	
13	Identification of CAD works a. Walkthrough survey on canals to identify works b. Prioritization of works and approve in GB meeting c. Preparation of estimates	PIO and SST with WUCS support	PMU to make periodic progress
14	Social audit boards	PIO and SST with WUCS support	
15	Construction of CAD works with standard designs		
	Technical training to WUCS on sustainable quality and quantity of construction works	PSC, PIO with SST	On site regular visits by SST
	Identification and prioritization of works through participatory walk through survey	WUCS with support from PIO and SST with inputs from PSC	
	Preparation for works during pre-closure and closure	WUCS with support from PIO and SST with inputs from PSC	
	Facilitating identification of materials	PIO with SST	
	Carrying out construction of CAD works by WUCS	WUCS Training by PIO and SST and inputs from PSC	
	Recording Measurement Book	PIO with SST	
	Financial Management	PIO with SST and inputs from PSC	
16	Operation and maintenance		
	WUCS engaging their own secretaries and laskhars /neergantis	WUCS Training by PIO and SST	
	Micro plan preparation including area irrigated, water charges and water rates and collection (Work Book Exercise)	Community Training provided by Project	PIO tests different models with WUCS
	Works contract with WUCS	PIO	
	MOU for water management with WUCS	PIO and SST staff with WUCS support	
	Water rates prepared according to volumetric supply and timely supplied to WUCS	PIO and SST with WUCS support	
	Collection of water charges and remittance through WUCS	Community mobilization by SST and WUCS	Comparative progress
17	Monitoring and evaluation		
	Following construction, review of scheme implementation in order to identify problems and improve procedures for future subprojects	PIO with SST with inputs from PSC	PIO with SST
	Spot checks of subprojects during implementation	Safeguards and Quality Monitoring Cell	Identifies problems and solutions, provides feedback to PIO
	Socio-economic evaluation of 20% of subprojects about 1 year after construction	Safeguards and Quality Monitoring Cell with inputs from PSC	Identifies problems and solutions, provides feedback to PIO
18	Formation of Main System WUCS Federation		

	Activity	Main responsibility	Follow-up
	Fulfill the eligibility requirement to form federation at all the primary level WUCS	PIO and SST with WUCS	
	Facilitate identification of chief promoter to form federation as required by Cooperative Act	PIO and SST with WUCS	
	Preparation of Bylaws of WUCS Federation	PIO and SST with WUCS	Vetted by Registrar of Cooperatives

PROJECT-1 PROCUREMENT PLAN

Basic Data

Program Name: Karnataka Integrated and Sustainable Water Resources Management Investment Program–Project 1

Country: India

Executing Agency:

Karnataka Neeravari Nigam Limited

Implementing Agencies:

Advanced Centre for IWRM

Loan Amount: \$31 million

Loan Number: TBD

Date of First Procurement Plan: Procurement Plan for Project 1 was approved on 28 July 2014

Date of this Procurement Plan: Procurement Plan for Project 1 was approved on 28 July 2014

A. Process Thresholds, Review and 18-Month Procurement Plan

1. Project Procurement Thresholds

1. Except as the Asian Development Bank (ADB) may otherwise agree, the following process thresholds shall apply to procurement of goods and works.

Procurement of Goods and Works	
Method	Threshold
International Competitive Bidding for Works	\$40 million and above
International Competitive Bidding for Goods / supply & installation ³	\$1,000,000 and above
National Competitive Bidding (NCB) for Works	Below that stated for ICB, works other than Water User Cooperative Society (WUCS) works contracts
National Competitive Bidding for Goods / supply & installation	\$100,000 and above and less than \$1,000,000
Shopping for Goods	Below \$100,000
Exceptional methods: Community participation	Simple civil works for command area development works contracts costing less than \$30,000 (according to PAI 5.10) each may be directly awarded to Water User Cooperative Societies as a community works contract.

2. ADB Prior or Post Review

2. Except as ADB may otherwise agree, the following prior or post review requirements apply to the various procurement and consultant recruitment methods used for the project.

Procurement Method	Prior or Post	Comments
Procurement of Goods and Works		
ICB Goods	Prior	
NCB Works	Prior for the first NCB	First set of NCB model bid documents to be reviewed by ADB prior to tendering for each type
NCB Goods	Prior for the first NCB	First set of NCB model bid documents to be reviewed by ADB prior to

Procurement Method	Prior or Post	Comments
		tendering for each type
Shopping for Goods	Prior for the first shopping bid document	Post review for subsequent shopping
Force account for works	Total amount for entire Project-1 is \$200,000 (this amount includes all contract packages under Project-1)	Utility shifting and deposit works of government owned departments or organizations (such as shifting power and telephone poles, realigning water/drainage pipes, cables, cutting trees)
Exceptional methods: Community Participation	Simple civil works for command area development works contracts costing less than \$30,000 (according to PAI 5.10) each may be directly awarded to Water User Cooperative Societies as a community works contract.	ADB PAI 5.10 for community participation is followed.
Recruitment of Consulting Firms		
Quality- and Cost-Based Selection (QCBS)	Prior	90:10 weighting for technical and financial scores respectively for PSC
Recruitment of Individual Consultants		
Individual Consultants	Prior	

3. Goods and Works Contracts Estimated to Cost More Than \$1 Million

3. The following table lists goods and works contracts for which procurement activity is either ongoing or expected to commence within the next 18 months.

Contract Package No.	Contract Description	Value \$million	Procurement Method	Date of Advertisement	Prequalification of Bidders Y/N	Type
Works						
Gondi – NCB-1	Main canal and distributaries earthwork, lining, structures and flow measurement devices	16tRUS TINj.0	NCB	Feb 2014 ^a	N	Works

Contract Package No.	Contract Description	Value \$million	Procurement Method	Date of Advertisement	Prequalification of Bidders Y/N	Type
Goods						
FMT- ICB- 2	Flow measurement and telemetry system – supply and installation	3.5	ICB	Aug 2014	N	Goods

^a Bidding period extended until July 2014.

4. Consulting Services Contracts Estimated to Cost More Than \$100,000

4. The following table lists consulting services contracts for which procurement activity is either ongoing or expected to commence within the next 18 months.

Contract Package Number	General Description	Contract Value \$million	Recruitment Method ¹	Advertisement Date (quarter/year)	International or National Assignment	Comments
PSC-1	Program Support Consultants (including WUCS strengthening support)	3.7	QCBS FTP Q: C ratio 90:10	Oct 2013	International	Consulting Services
AC-IWRM-2	AC-IWRM Strengthening Consultants (this will comprise a number of individual experts)	0.8	ICS	Dec 2013	International	Consulting Services (approximately 3 individuals)
ENVM-4	Environmental Monitoring	0.48	QCBS (90:10)	Sep 2014	National	Consulting Services
EFFM-5	Effects Monitoring	0.18	QCBS (90:10)	Sep 2014	National	Consulting Services

ICB= international competitive bidding, NCB= national competitive bidding, QCBS= quality cost based selection, ICS=Individual Consultant Selection.

5. Goods and Works Contracts Estimated to Cost Less than \$1 Million and \$40 million respectively, and Consulting Services Contracts Less than \$100,000

5. The following table groups smaller-value goods, and works contracts for which procurement activity is either ongoing or expected to commence within the next 18 months. There are no consulting services contracts of less than \$100,000.

Contract Package No.	Contract Description	Value \$million	Procurement / Recruitment Method	Expected Date of Advertisement	Prequalification of Bidders Y/N	Type
Works and Goods						
Gondi – DC-multiple lots	Command area development works (minimum number of 10 packages per WUCS)	3.70	Community participation	Y2014– Y2017	N	Works
Multiple lots	Office equipment	0.2	Shopping	Y2013 – Y2015	N	Supply
Multiple	Hardware and software (various in	0.2	Shopping	Y2013 –	N	Supply

Contract Package No.	Contract Description	Value \$million	Procurement / Recruitment Method	Expected Date of Advertisement	Prequalification n of Bidders Y/N	Type
lots	multiple lots)			Y2015		

B. Indicative List of Packages Required Under the Project

6. As noted above.

DRAFT TERMS OF REFERENCE FOR EFFECTS MONITORING

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).¹ 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-sector water demands. The Karnataka Integrated and Sustainable Water Resources Management Investment Program (KISWRMIP) is \$225.0 million program financed by the State, ADB and beneficiaries. It 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.
2. The KISWRMIP will support three outputs: (i) state and basin institutions strengthened for IWRM, (ii) irrigation system infrastructure and management modernized, and (iii) program management systems operational.
3. **Effects Monitoring.** During the project preparation technical assistance for the KISWRMIP, a socioeconomic baseline survey was undertaken for Gondi subproject. An approximate of 3.6% sample households (equivalent of 100 households) to the total households of the command area was taken up for the study. This may be expanded to a larger sample as part of the comprehensive baseline survey which will be used for monitoring project outcome and impact and periodic monitoring. Similarly, a baseline survey will be undertaken as part of the feasibility stage for subsequent subprojects in Project-2.
4. A final effects monitoring will be undertaken for Project-1 (in August 2017) prior to its completion. Similarly, prior to program completion another effects monitoring and evaluation will be undertaken (in May 2021) for all subprojects developed under the program. This will include comparison with a control group. A specialist entity (including academic institute) will be recruited for expansion of the baseline survey and effects monitoring and evaluation at various stages of program implementation.
5. As part of the program performance management system (PPMS), the Project-1 will develop a comprehensive management information system (MIS) database which will incorporate output-1 parameters for IWRM with those of output-2 for infrastructure modernization and WUCS strengthening. The same MIS will be used throughout the program and will also include for Project-2 components. The same firm will undertake effect monitoring and evaluation throughout the program and will provide periodic progress updates based on the MIS and baseline data.
6. Effects monitoring support will be provided by consulting firms, academic institutions or other agencies with substantial demonstrated experience and capacity in rural social and economic data collection, survey management, analysis and reporting. The objective of the effects monitoring is to detail and explain project impacts on households in the scheme area (including irrigation users, households excluded from irrigation, landless and labor households, specific effects on women, health impacts and so on).

¹ 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).

7. The agency will provide a team leader with at least a Masters level qualification in a relevant discipline like sociology and other related fields, 10 year experience of leading rural socio economic surveys and fluency in local languages (like Kannada and Hindi) and English. In addition the agency will provide:

- (i) Field Survey Team Leader(s) experienced and qualified in rural socio economic surveys
- (ii) Field Supervisor(s) (one for each irrigation subproject at mid-term and completion review)
- (iii) Sufficient Field Enumerators to provide good coverage for data collection from each irrigation subproject. At least 30% will be women field enumerators.
- (iv) Data entry operators

8. The effects monitoring will be recruited using competitive bidding and in accordance with ADB procurement guidelines. The contract will be a lump sum contract for a fixed price within which the above staffing and logistics and operational costs will also be included.

9. The effects monitoring team will undertake the following tasks:

- (i) Collection of relevant secondary data on infrastructure, population agricultural systems and project interventions.
- (ii) Baseline and post construction social and economic studies of benefitted villages and households in irrigation schemes rehabilitated under the project envisaged to cover about 100,000 ha.
- (iii) Village level data will include Identifiers population (village size, households, religion, ethnicity), poverty assessment, social inventory, village infrastructure, main occupations, crop area, livestock ownership, access to infrastructure and services (education, health, transport, irrigation), health issues and trends, access to domestic water.
- (iv) Household socio-economic and livelihoods surveys will include demographic, household inventory, income, livelihoods and employment, agricultural enterprises, credit access, plot level crop inputs (including labor and mechanization), outputs and disposal, attitudes to and participation in irrigation.
- (v) Scheme level agricultural input, output and labor prices, including seasonal effects.
- (vi) Focus group discussions on irrigation access and services, project activities and support, WUC training and performance.
- (vii) Prepare a survey plan, prepare and test suitable survey instruments, including Field Manuals for village level and household surveys, field testing of surveys.
- (viii) Formal and in field training of survey staff.
- (ix) Sample design. A PPS sampling approach with village size as a unit is proposed. Secondary (household) samples should be 10 to 20, sampled systematically, with an overall sample size of 250 to 500 households per project scheme. If circumstances require stratified sampling can be proposed, or purposive sampling of specific types of households undertaken to represent special groups. Sample design will be detailed and agreed with the Project prior to field work. For Gondhi Scheme it is suggested that all ten villages are sampled, stratified by village size.
- (x) Field data collection, survey timetable, field supervision, survey form checking.
- (xi) Design data entry formats (to be provided as spreadsheets) capable of being used in statistical analysis software, data entry coding and data validation procedure.

- (xii) Undertake data entry and validation.
- (xiii) Undertake data analysis and survey reporting, to include detailed crop budgets for major crops and farmer types (marginal, small and medium size), location in the scheme and location on distributary canals (head, middle or tail).

STAKEHOLDER PARTICIPATION & CONSULTATION

A. Project Introduction

1. The State Government of Karnataka (SGOK) has requested financing from the Asian Development Bank (ADB) to enhance water security in selected basins where there is increasing water stress due to rapid economic growth and future competing needs for water supply and industry. An integrated water resources management (IWRM) approach is required to meet increasing water demand while promoting its judicious use and protecting human water needs and river environments. Greater efforts will be required to improve efficiency and sustainability in water use, particularly for irrigation (which uses 85% of abstracted water), urban water supply and sanitation (WSS), industry and the environment. The SGOK, Government of India (GOI) and ADB have agreed on technical assistance for preparing the Karnataka Integrated and Sustainable Water Resources Management Investment Program (KISWRMIP). The expected impact of the program is enhanced water security, sustainability and river environment for rural and urban population in selected water-scarce river basins, which will be measured through improved and sustainable access and incomes.

B. Need for Stakeholder's Participation and Consultations (P&C)

2. The Asian Development Bank's (ADB) Safeguard Policy stresses that the Project EA will conduct meaningful stakeholders consultation with affected persons, and civil society for every project identified as having multiple dimensions of project impact. However, it is also important to know that there may also be issues where consultation is not appropriate ie when a) the room for manoeuvre is so limited, either by statutory or b) budgetary restrictions, that the consultation is meaningless c) where we have already consulted on a similar issue and where d) consultation fatigue' may set in and e) where the issue should or could be resolved without needing a process of consultation.

3. Stakeholder participation is a process whereby stakeholders - those with rights (and therefore responsibilities) and interests - play an active role in decision-making and in the consequent activities which affect them. Stakeholder participation goes much further than, and has to be distinguished from, stakeholder consultation, which refers to one aspect of participation only. Stakeholder consultation is providing a forum for stakeholders to speak up and voice opinions only. For projects like KISWRMIP which address environmental, social and economic impacts, consultation will not be a single conversation but a series of opportunities to create understanding about the project among those it will likely affect or interest, and to learn how these external parties view the project and its attendant risks, impacts, opportunities, and mitigation measures. Listening to stakeholder concerns and feedback can be a valuable source of information that can improve project design and outcomes and help ADB to identify and control external risks. It can also form the basis for future collaboration and partnerships. For stakeholders, ADB initiated consultation process is an opportunity to get information, as well as to learn about the local context in which a project will take place, to raise issues and concerns, ask questions, and potentially help shape the project by making suggestions for the ADB to consider and respond to. Further, P & C process help increase the level of support for the Project and related activities from a range of stakeholders, which can speed up processing and reduce challenges during implementation. P & C is also expected to improve the effectiveness, relevance, and sustainability of development activities in the long run.

4. Whether a project proposal is straightforward or complex, effective stakeholder P & C process, particularly prior to initiating the formal approvals process, is a key factor in achieving timely completion of the government approvals process.
5. Appropriate P& C Process will enable proponents to:
 - (i) Identify the key issues involved with the project and the likely impacts as an early identification of these matters allows the opportunity to consider alternative approaches with less impact.
 - (ii) Obtain information as to how best to manage any adverse impacts. Early discussion on management approaches will reduce the time required for negotiation on these matters during the formal assessment.
 - (iii) Be aware of information that will need to be provided in support of the formal approvals that will be required to allow the project to proceed. An early understanding of information requirements will help ensure that information gathering processes do not cause delay.
 - (iv) Establish two-way communications channels is essential
6. The nature and level of P&C Process that is appropriate will differ depending on the particular proposal, including such factors as the scale of the project and its potential social or environmental impacts.

C. Key Objectives of Stakeholder P&C

7. The broad objective of the stakeholder engagement in P&C process is to provide authorities, as well as interested and affected parties with the opportunity to identify issues, concerns, and opportunities regarding the proposed Project and to address key stakeholder concerns during the preparation of the various safeguard intervention measures. The specific objectives shall cover the following:
 - (i) To provide information about the project and to tap stakeholder information on key issues /problems and concerns affecting their livelihood
 - (ii) To elicit environmental and social and economic baseline information in the project areas;
 - (iii) To provide opportunities to stakeholders to discuss their opinions and concerns;
 - (iv) To manage expectations and misconceptions regarding the project;
 - (v) To discuss potential impacts and verify significant or major environmental, social and economic impacts identified; and Acquire suggestions of the community for mitigating any anticipated adverse environmental and social impacts and increasing expected benefits of the Project
 - (vi) To inform the process of developing appropriate mitigation and management measures as well as institutional arrangements for effective implementation.
 - (vii) Promote participation of the local people, local level government stakeholders, elected representatives and other community representatives to create opportunity to play a role and express their views.
 - (viii) Facilitate the community to be prepared with enhanced confidence and capacity for meaningful engagement in the project
8. The prerequisites to achieve the objectives:
 - (i) To lay down the guiding principles for P&C.

- (ii) Key stakeholders identification.
- (iii) Share information on P&C processes undertaken so far and the outcome of such consultation process thereof.
- (iv) Sharing information on resources and responsibilities planned for P&C implementation.
- (v) Development of framework for monitoring and reporting on the effectiveness of the P&C process

D. Guiding Principles for Stakeholder P&C

- (i) P&C should aim to seek informed public opinion and not just instant reaction.
- (ii) The public should have a say in decisions about actions that could affect their lives.
- (iii) P& C includes the promise that the public's contribution will influence the decision and that it promotes sustainable decisions by recognizing and communicating the needs and interests of all participants, including decision makers.
- (iv) P&C seeks out and facilitates the involvement of those potentially affected by or interested in a decision.
- (v) P & C process help seek input from participants in designing how they participate.
- (vi) P & C should provide participants with the information they need to participate in a meaningful way.
- (vii) P& C shall help inform participants how their input affected the decision.
- (viii) Consultation needs to be carried out throughout the project cycle and timely disclosure of relevant and adequate information has to be undertaken.
- (ix) In P&C Process, all relevant views of affected people and other stakeholders into decision making, such as project design, mitigation measures, the sharing of development benefits and opportunities, and implementation issue also need to be incorporated environmental quality.
- (x) P&C Process should ensure consultation is undertaken in an atmosphere free of intimidation or coercion and is particularly inclusive of and responsive to the needs of the disadvantaged and vulnerable groups especially those below the poverty line, the landless, the elderly, female headed households, women and children, Indigenous Peoples, and those without legal title to land.
- (xi) P& C Process shall facilitate access to information as access to information provides an important guard against arbitrariness in public decision-making and also helps to enhance transparency and accountability. Information dissemination at all levels will hence be a critical pre-requisite for meaningful consultations.
- (xii) P&C process should establish feedback mechanism and such feedback needs to be incorporated into policy design and decision making processes.
- (xiii) In the P&C process, all relevant views of affected people and other stakeholders into decision making, such as project design, mitigation measures, the sharing of development benefits and opportunities, and implementation issue also need to be incorporated.

E. Key Stakeholders in the Project

9. Stakeholders are people/communities who may - directly or indirectly, positively or negatively affect or be affected by the outcomes of projects or programs.

- (i) **Primary stakeholders** are the beneficiaries of a development intervention or those directly affected (positively or negatively) by it. They include local populations (individuals and community-based organizations) in the project/program area, in particular, poor and marginalized groups who have traditionally been excluded from participating in development efforts.
- (ii) **Secondary stakeholders** are those who influence a development intervention or are indirectly affected by it. They include the borrowing government, line ministry and project staff, implementing agencies, local governments, civil society organizations, private sector firms, service providers, the financial institutions and other development agencies/ institutions/ organisations.

F. Summary of Stakeholder Consultations Undertake

10. Many water and land related discussions arose during stakeholder consultation process and in Focused Group Discussions though relevant and important but were not necessarily 'within scope' of the proposed project and therefore not appropriate to address those emerging issues in detail in this report. In particular only those issues surrounding enhanced water security, sustainability and river environment for rural and urban population in selected water-scarce river basins as measured through improved and sustainable access, incomes, and water related parameters are considered as important. The project undertook consultations with Focused Group Discussions and with Water Users Cooperative Society (WUCS).

11. The time line and the profile of the participants are given in the tables 1 to 8. The stakeholder profile as indicated in cols (1-7) respectively corresponds to 1) State Govt 2) Villagers 3) Local Govt/ Gram Panchayat/ WUCs /Aanganwadi members 4) SOE (KNNL, CADA) 5) CSO 6) Female and 7) Consultants

Table 1: FGD - Stake holder's consultations and profile of participants in TLBC Project

Place	Date	Stakeholders Profile						
		1	2	3	4	5	6	7
Madhya and Durga Camp	23/03/12		15	5	3	2	2	3
Budihal	23/03/12		20	6	2	2	9	3
Nelahal	25/04/12		20	5	2	2	8	3
Kareguda	04/06/12	01	18	02			05	
Mustoor	04/06/12	01	17	03			05	
Hirekotankal	05/06/12	02	10	02	1		02	3
Tadakal	05/06/12	02	23	04	1		1	
Chikaltarvi	08/06/12		15	03			07	
Devipur	08/06/12	02	28	03			06	
Sujebal	12/06/12		15	01	2	1	03	
Hanwal	14/06/12	02	24	04			10	
Hagedal	15/06/12	01	10	02		02	06	
Hebbal	15/06/12	01	19	03			08	
Acharnarsapur	16/06/12		20	01			06	
Gundur	18/06/12		15	02		01	04	
Challur	19/06/12		15	03			05	
Turvihal	21/06/12		19	02			04	

Place	Date	Stakeholders Profile						
		1	2	3	4	5	6	7
Kholabal	23/06/12		22	01	1	2	03	
TOTAL		12	325	52	12	12	94	12

Table 2: FGD - Stakeholders consultation and profile of participants in Bhadra Project

Place	Dates	Stakeholder Profile						
		1	2	3	4	5	6	7
Shingrihalli	01/06/12		15	10	5		8	3
Doddabathi	16/06/12	02	10			2	01	4
Nalluru	16/06/12		19				03	2
Kondajji	18/06/12	02	12	06			05	3
Basavanahalu	18/06/12	01	12				04	3
Sathur	21/06/12	01	30	02		3	7	3
Kumbalur	21/06/12		9	02		2	04	3
Kulambi	21/06/12	01	17	7			06	3
Thadasa	22/06/12	01	15	03			07	01
Arahatholalu	22/06/12		11				04	2
TOTAL		8	150	30	5	7	49	27

Table 3: FGD - Stakeholders consultation and profile of participants in Gondhi Project

Place	Dates	Stakeholder Profile						
		1	2	3	4	5	6	7
Thallikatte	06/08/12		10	5	1	1		2
Dasarakallahalli	07/08/12		10	4	2			4
Dayanakpura	08/08/12		15	4	2	2		
Barandoor	08/08/12	1	15	6	2	3	2	
Korekoddegahalli	09/08/12		21	4	1	2	5	
Doddagopenhalli	28/08/12		20	4	1	1	3	4
TOTAL		1	91	27	9	9	10	10

Table 4: FGD - Stakeholders consultations and profile of participants in Vijayanagar Channel

Place	Date	Stakeholder Profile						
		1	2	3	4	5	6	7
Rama Sagara	09/08/12		15	8	3	4	3	3
Anegundi	07/09/12	01	19	04	2	1	02	3
Ibrahimpura	09/09/12	01	20	01			04	
Hulagi	11/09/12		25	03		2	06	
Nagenahalli	12/09/12		15	3	2	1		2
TOTAL		2	94	19	7	8	15	8

Table 5: WUCS - Stakeholders consultation and profile of participants in TLBC

Place	Date	Stakeholders Profile						
		1	2	3	4	5	6	7
Krishi Vigyan Kendra Gangavathi	11/04/12			6			1	3
Rice Research Station – Gangavathi	12/04/12			7				3

Agriculture Department, Gangavathi	12/04/12	8						3
Basapatna	15/05/12		3	2	3	51	2	1
Mushtoor	18/05/12		2		3	59	4	1
Budugumpa	23/05/12			2	3	40	1	1
Hirekotnakal	25/05/12			3	4	32	2	
Lakkamdinee	29/05/12		2	2	3		2	1
Hunshihall Hudda	04/06/12		3	1	3	30	2	
TOTAL		8	10	23	19	212	14	13

Table 6: WUCS - Stakeholders consultation and profile of participants in Bhadra Project

Name of WUCS and Place	Stakeholder Profile							
	Date	1	2	3	4	5	6	7
Beernahalli, Shivamogga Taluk	13/05/12		2	2	3	34	3	1
Nellisara, Badravathi Taluk	17/05/12		1	1	3	32	1	1
Yalavatti, Shivamogga Taluk	21/05/12		2		3	28	1	
Hosabelavanuru, Davanagere Taluk	23/05/12		1	2	3	23	2	1
Ganganarasi, Harihara Taluk	26/05/12		1	1	3	18	1	1
Kattalagere, Chennagiri Taluk	29/06/12		3	1	3	30	2	
Kulagatti-2, Honnalli Taluk.	03/06/12		1	2	3	31	3	
Mudugodu, Tarikeri Taluk	07/06/12		1	2	3	13	1	
Ragimasalavada, Harapanahali Taluk	12/06/12		2	1	3	21	1	
TOTAL		0	14	12	27	230	15	4

Table 7: WUCS - Stakeholders consultation and profile of participants in Gondi Project

Place	Date	Stakeholder Profile						
		1	2	3	4	5	6	7
Kagekodamage	06/8/12		30	3	1	4	3	1
Dasarakallahalli	07/8/12		10	4	2			4
Koppa Doddakere	07/8/12							
Bharandur	16/9/12		23		1	3		1
Shimoga	11/9/12				7	3		1
BRP Dam Site	28/9/12				12			9
TOTAL		0	63	7	23	10	3	16

Table 8: WUCS - Stakeholders consultations and profile of participants in Vijayanagar Channel

Place	Date	Stakeholder Profile						
		1	2	3	4	5	6	7
CADA-Munirabad	08/6/12				6			6
Tungbhadra Board –Hospet	09/6/12				4			6
Thurtha Channel, Venkatapura	09/8/12		30	3	1	4	3	1
Ramasagara Channel - Ramasagara	09/8/12		25	8	3	4	3	3
Anegundi	13/9/12		40		2	3	2	1
Raya Channel - Nagenahalli	14/9/12					3	4	
HWHAMA -Hospet	14/9/12		2		3	2		1
Upper Gangavathi – Ayodhya	15/9/12		16	2	2	3		9

Place	Date	Stakeholder Profile						
		1	2	3	4	5	6	7
Siruguppa and Channel - Siruguppa	17/9/12		15	1	1	3		1
Bichal Channel - Rajoli	19/9/12		41	2	2	3	2	
TOTAL		0	169	16	24	25	14	28

G. CSO Consultation Workshop

12. A consultation workshop with Civil Society Organization representatives¹ on Program outputs and projects was held on 14 December 2012 in Bengaluru. The topics discussed during the workshop were:

- (i) Advanced Center for IWRM – Innovative Initiative in Karnataka
- (ii) IWRM based Water Management in Tungabhadra Sub Basin
- (iii) Capacity Building of Water Users Cooperative Societies; and
- (iv) Institutional Framework of the Program

13. The learning from the CSO consultation workshop was as follows:

Workshop Topic	Issues Raised
Advanced Center for IWRM – Innovative Initiative in Karnataka	<ul style="list-style-type: none"> On Public Private Partnership concern was raised on: <ul style="list-style-type: none"> How it works Who are all the partners What is the water allocation for the PPP How will private partners recover the investment Detail study required on the actual allocation & availability of water in the state Policy for the total IWRM solution should be formed All IWRM actions and information should be transparent and shared with the stakeholders
IWRM based Water Management in Tungabhadra Sub Basin	<ul style="list-style-type: none"> Is existing and future industrial development being considered and what is their water requirement Power, chemical and mining industries which are emerging in the area need to be considered during the basin planning and allocation. Requirements from the industries are to be consider during Basin Planning How will this effect agriculture water supply
IWRM based Water Management in Tungabhadra Sub Basin	<ul style="list-style-type: none"> Social and technical issues to be shared and discussed with the WUCS before finalizing project interventions Social and technical aspects should be integrated to the dimension of the project Sustainable management should be considered from the beginning of project designing and planning Alternate technologies such as precast semi pipe water

¹ Involved organisations were Action for Food Production, Ashoka Trust for Research in Ecology and the Environment, Adavi Sidheshwara Rural Development Society, Consulting Engineering Services (I) Pvt Ltd, CIVIC, Dhanya, Gram Vikas, Institute for Studies on Agriculture & Rural Development, JalaSpandana – South India Farmers Organisation for Water Management, Public Affairs Centre, SECON Pvt Ltd, Technology Informatics Design Endeavour (TIDE)

Workshop Topic	Issues Raised
	channels for CAD work
Capacity Building of Water Users Cooperative Societies	<ul style="list-style-type: none"> • WUCS strengthening is critical for modernization planning, implementation and O&M • CSO experience and learning should be considered while planning WUCS interventions • The gaps between the planning and actual requirement should be filled for the successful implementation of project • Requisite power and authority should be provided for the WUCS to allow them to function effectively • Land salinity problems should be addressed • Social processes (people's participation) should be given equal importance as technical aspects. • Both the social and technical aspects should run in parallel in project implementation • Different / new farming system has to be considered in consultation with farmers
Institutional Framework of the Program	<ul style="list-style-type: none"> • Role of PRI should be included in implementation design • Innovative framework must be considered for implementation • The Program PMU should be located in the project field area • IT systems should be used for monitoring and evaluation of the project • Involvement of the Agriculture Department will be important for project success • Good documentation process should be adopted by the project covering study of project process, outcomes and impacts

H. Key Responses by Stakeholders

14. Emerging response from stakeholder's consultation process is indicative of the policy and practices of water resources development in the basin over a period of time. What could be inferred from such consultations is that there is need for a more holistic perspective for water resource management. The issue of political economy has of course the least of the place. Skills in basin planning, hydrology, water management, financial planning, O&M institutions and sustainable development issues are totally lacking in the water domain. What could be inferred is that various forms of articulation/responses by stakeholders during the consultation process broadly (if not specifically) relates or falls into to the following key areas requiring attention-action and support.

i. Policy and Institutional Arrangements for IWRM²

15. There are no institutional arrangements at the State level to consider sectoral water demands, plan and manage water resources. Responsibilities of water management are fragmented between departments without formal mechanism to ensure co-ordination. The

² More for details see CDTA C1 Component 1 Report.

current water law/acts/policies are inadequate to facilitate successful implementation of a basin organization in the Tungabhadra Sub-basin, let alone improve overall integrated water management in the State. The lack of a coordinated and modern water law, embracing all aspects of water usufruct rights and allocation, trading, pricing etc., and the plethora of departments involved in water management goes against rational and sustainable planning and management of water in Karnataka. The issue is to create a high level or State-wide framework that will clearly develop or guide the essential water policies and strategies right across Karnataka and in so doing will lead to improved water management in the inter-State river basins as well. With increasing water scarcity and conflicts between various competing sectors and at various levels - macro as well as micro level of distributaries, communities and individual users, the formal water rights as a mechanism for water allocations and accountability has gained importance. Currently, the water rights are governed by the Water Policy and Irrigation Acts, of the respective states. However, there is no clear legal framework specifying water rights, even though various acts have some basis for defining some form of rights”, Competing Water Uses in Tungabhadra Sub-basin, India. The concept of IWRM is the integration and coordination of (i) management of surface water, groundwater and rainwater (ii) government and private sectors that are separately managing water resources; (iii) policy, resource management and service delivery of water; (iv) management, conservation, maintenance, scientific use of water resources; and integration of (v) economic, social and environmental outcomes; and (vi) issues related to food and energy security. The proposed interventions address some of the above mentioned issues.

ii. River Basin Plan and Organisations³

16. The objective of the river basin sub-component of the project is to improve water resource conditions and management in selected, pilot river basins in Karnataka by taking an IWRM approach which will include cross sectoral river basin organisations, preparing integrated river basin plans and implementing plan elements as agreed. There are a number of plans that impact on the water and land resources of the sub-basin. Each sub-sector (irrigation, industry, urban water supply and sanitation, and so on) has a plan of some description developed by the relevant agency. But these are prepared in isolation and do not adequately take into account cross-sectoral water resource management aspects. An effective river basin plan provides the foundation and overall policies directions for water resource management at basin level and the development of such a plan aims to provide a comprehensive guide for the integrated development and management of its water resources in a river basin, the hydrologic planning unit generally accepted to be most appropriate for water resource planning. Such a plan should be the primary instrument for integrated water resources management and improved coordination within the individual basin, guided by policies and plans implemented at national and state level. Having clearly defined and robust institutional arrangements for water resource management in place are a fundamental requirement for good river basin management. In this sense, “institutions” refers to the various laws and policies in place, the organisations that have been established by government to implement them, and the mechanisms for interaction among those organisations.

iii. Irrigation Modernization⁴

³ Source: CDTA Component 2 of Upper Tunga Framework Plan

⁴ Stakeholder consultation in TLBC voiced their view on Irrigation modernization and according to them the Provision of parallel field canal for efficient water management to tail end command of the particular pipe outlet. b) Use of regenerated water for feeding to tail end command by provide lift irrigation scheme lifting water from Nala and feed to suffering command in the tail end reach wherever possible. c) Projects like construction of lift irrigation schemes and pickups with a focus on irrigate lands both localized and non-localized command d) filling of pit wells drinking water, ponds and balancing reservoirs. e) existing tunnel design discharge of 3100 cusecs in the jurisdiction of Vaddarahatti division which is bottleneck for drawing more than the required

17. Irrigation Modernisation initiative is viewed as an opportunity to comprehensively examine the operations of the Irrigation services including layout and function of the irrigation water supply system. The aim is to identify changes that can be made to the supply system itself and its operation in order to strengthen viability and efficiency in the face of a future with less water. Modernisation planning promotes challenging the status quo within which an organisation has been operating and questioning existing biases and testing boundaries are critical elements of this challenge.

iv. Land and Water Management Plan

18. In any basin or sub-basin, there are close linkages among different uses of water and land resources, and planning each in isolation leads to inefficiencies and “side impacts” such as water shortage and environmental degradation. The government has a State Water Plan, but this does not seem to play a significant role in water resource management and appears to have done little to integrate planning and management across the sub-sectors and across the State. In addition, while irrigation development planning is to some extent done at the basin level, at the sub-basin level, no integrated planning process is in place, and this is needed.

v. Planning and Execution of CAD and OFD Works

19. The primary objective of CADA was to improve water use efficiency through integrated area development in the irrigation command, including modernisation of the distribution system, the provision of drainage and the maintenance and operation of both the distribution and drainage systems. On-Farm Development⁵ (OFD) is an integrated process of levelling and shaping the land for smooth flow of water, constructing field irrigation channels, providing drainage facilities, forming the farm roads and realigning the field boundaries through appropriate consolidation of holdings. Thus, OFD⁶ includes works, such as field channels, land levelling, field drains and conjunctive use of surface and groundwater sources; introduction of rotational system of water distribution (RWS) to ensure equitable and timely supply of water to each and every farm holding; and evolving and propagating crop patterns and water management practices appropriate to each command area.

vi. Formation and Strengthening of WUCS

20. WUCS at different levels are expected to be actively involved in: (i) maintenance of irrigation system in their area of operation; (ii) distribution of irrigation water to the beneficiary farmers as per the roster system (iii) preparation of water demand and collection of water charges; (iv) resolve disputes among the members and WUA; (v) monitoring flow of water in the irrigation systems. In order that the WUCS at different levels are able to resolve conflict along irrigation systems in which they have a role it will be necessary that selected representatives have a greater understanding of such matters as irrigation scheduling, water usufructs and seasonal quotas to complement the conflict management techniques which will also be necessary. Training will have to be designed and provided in order to strengthen the WUCS.

design discharge so as to accommodate developed localized and non-localized command, to be taken up as activities as part of Irrigation modernisation.

⁵ As defined by Central Water Commission, Government of India

⁶ Comment: On-Farm Development (OFD) is considered as one of the strategies to improve water use efficiency and to reduce adverse effects on soil fertility. But its successful implementation at the field level seems to be far from satisfactory. Therefore, it is necessary to address both technical and institutional factors influencing the adoption or otherwise of OFD by the farmers and its impact on productivity of crops

Farmers have been expressing the need for capacity building initiatives in order to discharge their functions. Also articulated their concerns for strengthening WUCS by addressing the problems confronted by them in terms of a) lack of legal back up and policy changes b) system deficiency c) uncertainty of water availability d) fear of financial viability e) lack of technical knowledge f) lack of leadership g) lack of publicity and training.

vii. Water Resource Information System (WARIS)

21. Water Resource Information is the broad class of information needed by managers to manage not only operations and maintenance but also initial water used on farm. It includes information for planning, implementation, monitoring, review and evaluation. It is vital for planning, directing and controlling operation and maintenance activities. The availability of reliable information on all aspects of water resources management is fundamental to the successful implementation of efficient water management strategies. Planning is the first step in managing operation and maintenance of irrigation scheme. Further, the knowledge and monitoring of water resources, uses, demands and risks related to water are indispensable basic elements to ensure a good water management. This function of knowledge and monitoring is developed in several stages which are the collection of basic data, their validation and stocking, their processing and the diffusion of information obtained on water situations.

viii. Capacity Building of Water Institutions and Agricultural Staff

22. Building capacity at all levels is vital at different levels within government institutions, as also within local communities, in order to improve the provision and maintenance of service delivery. These capacities do not only relate (as is commonly understood) to technical issues, but more importantly to a range of social, managerial and institutional issues from organizing effective community participation, building solidarity, vision and a sense of purpose within communities, and starting and running efficient community-based organizations' to dealing with government procedures and legal requirements and conflict resolution within the Community Based Organisations-all in conformity with the IWRM principles.

I. Public Consultation and Participation during Project Implementation

23. The P&C process is aimed at informing the stakeholders of the project plans and activities in an ongoing manner. Consultations & communication will be continuous agenda and an integral part of the project. To ensure the same the Program Communication Plan⁷ will be an instrument to carry forward the P&C process.

24. The Program Communications Plan covers a range of communication needs of the project. First, it delineates the stakeholder consultation process to be adopted by project management to facilitate creating awareness and participation for effective implementation and safeguard. Second, it addresses the need to introduce and explain the project to a wide range of audiences who can influence and affect an enabling environment for the project. Finally, it also informs the general public in the State and outside about the IWRM based water management actions being initiated by the government to elicit their support, knowledge and participation.

25. Consequently, the Communication Plan has two components:

⁷ For more details, please refer a separate report on Communication work Plan

- i. Communication about project actions to stakeholders and other audience implemented by the PMU and effective during the life time of the project
 - a. Under the Right to Information Act
 - b. Under the Project Management System
- ii. Information and knowledge communication related to IWRM based water management actions in the State that will be implemented by the AC-IWRM that transcends the life of the project.

26. The range of communication medium and tools that could be used are:

Written	Verbal	Visual
1. Education/Training Material	1. Folk Theatre/Folk Art Form	1. Film/Electronic Media Campaign
2. Pamphlet/Brochure/Newsletter/Presentation	2. Public Meeting/Campaign/Public Briefing	2. Display/Poster
3. Website/Blog/Group Email/Social Network Sites	3. Groups Discussion/Stakeholder Interview/Personal Contact	3. Exhibition/Fair
4. Study Report/Case Study/Working Paper/Technical Note	4. Workshop/Seminar/Consultation Meeting	
5. Press Release/Advertisement	5. Media Briefing	
6. Site Announcement Sign	6. Site Visit/Exposure Visit	
7. Letter/Email/Memo/Notice		
8. Policy/Legislation/Government Order		
9. Agreement/Contract/Memoranda of Understanding		
Action Taken Report		

9. Reporting Arrangement

27. Consultation and participation process will be well documented for each and every consultations and consultation methods like workshops, FGDs, open meetings, and any other procedures) including records of participation, disclosure issues, concerns raised by the participants, options provided and opinions referred to by the stakeholders. The records and recommendations will be reported in the periodical monitoring reports, mid-term reports and all evaluation reports.