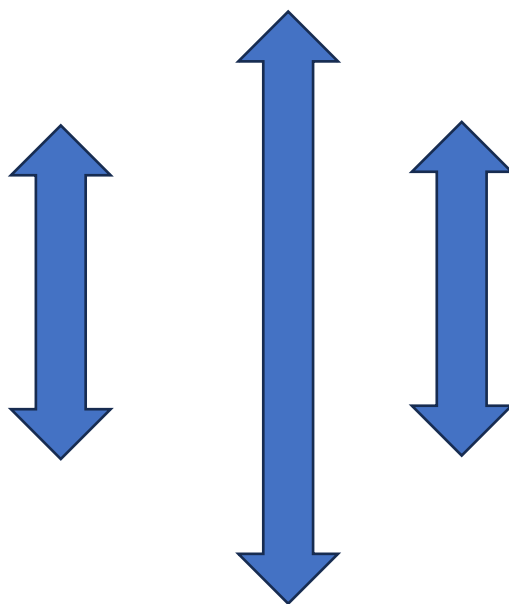




Government of Nepal
Ministry of Energy, Water Resources and Irrigation
Department of Water Resources and Irrigation
Community Managed Irrigated Agriculture Management Project-AF
Jawalakhel, Lalitpur

Consulting Services
for
Project Implementation and Management Supports
(PIMS) Consultant
for
Irrigation Modernization Enhancement Project (IMEP)



May 2024

ABBREVIATIONS

AKCs	Agriculture Knowledge Centre
CAMO	Central Agriculture Management Office
CPMO	Central Project Management Office
DoA	Department of Agriculture
DWRI	Department of Water Resources and Irrigation
EARF	Environmental Assessment and Review Framework
EMP	Environmental Management Plan
FMIS	Farmer Managed Irrigation System
GRM	Grievance Redress Mechanism
HLIP	Hill Lift Irrigation Project
IPP	Indigenous People's Plan
ISP	Irrigation sub-project
MoALD	Ministry of Agriculture and Livestock Development
MoEWRI	Ministry of Energy, Water Resources and Irrigation
NTP	Notice to proceed
PCR	Project Completion Report
PIUs	Project Implementation Units (WRIDDs, AKCs, HLIPs, RIMO, RAMO)
RAMO	Rajapur Agriculture Management Office
RF	Resettlement Framework
RIMO	Rajapur Irrigation Management Office
RP	Resettlement Plan
SPS	Safeguard Policy Statement
SMC	Sub-Project Management Committee
WRIDDs	Water Resources and Irrigation Development Divisions
WUA	Water User's Association
WUC	Water User's Cooperatives

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TERMS OF REFERENCE FOR PROJECT IMPLEMENTATION AND MANAGEMENT SUPPORT (PIMS) CONSULTANT

I INTRODUCTION

- 1 The project will be implemented over a period of 72 months, indicatively November 2024 to October 2030. The detailed implementation plan for the project is in the project administration manual (PAM). The consultant firm will be expected to prepare its personnel schedule and workplan in accordance with the project implementation plan.
- 2 The project implementation and management support (PIMS) consulting services consist of the following of 594 person -months of national consultants and 242 person months of non-key experts.
- 3 The project scope and management arrangements are outlined in the PAM which sets out the roles and responsibilities of all government agencies and staff in project implementation and oversight.

1. Project Description

- 4 The project will improve the income of approximately 56,000 beneficiary families in 5 provinces; Koshi, Madhesh, Bagmati, Lumbini, and Gandaki. This will be achieved through; (i) rehabilitation and upgrading of 32,000 ha of surface water irrigation, construction of 12 new pilot hill lift projects to irrigate 1,400ha; (ii) support the strengthening of agriculture and irrigation institutions; and (iii) introduction of modernized and climate smart agriculture systems.
- 5 The project will be aligned with the following impact: national food security increased. The project beneficiaries will be small and marginal farmers who will benefit through the following outcomes; modernized irrigated agriculture to enhance productivity, sustainability and livelihoods.
- 6 To meet the project objectives the project will have 3 outputs:
- 7 **Output 1: Irrigation infrastructure modernized:** This output will modernize FMIS infrastructure in Bagmati, Koshi, Lumbini, and Madhesh provinces to improve performance and increase resilience to climate change. Across those irrigation systems, the project will (i) provide gated intake structures and protect riverbanks and hill slopes to reduce flood and sediment ingress; (ii) improve irrigation efficiency, stability, and equitable management of irrigation water through targeted canal lining and improved control structures and provision of cross drainage; and (iii) support on-farm irrigation by upgrading minor canals and expanding use of modern pipe distributions. The project will introduce hill lift irrigation schemes and piped irrigation in the largely unirrigated mid hill areas of Gandaki and Lumbini Provinces. To mitigate dry season water scarcity in the Terai the project will pilot community-based conjunctive groundwater at selected schemes The program will include:
 - Rehabilitation and upgrading of 32,000ha of surface water irrigation including; (i) 66 hill irrigation schemes (5,889ha), 34 terai irrigation schemes (11,563ha) in Koshi, Madhesh and Bagmati provinces; (iii) upgrading for modernization of key infrastructure of the Rajapur Irrigation Project (RIP 14,500ha) in Lumbini Province. In addition, the project will construct 12 new pilot hill lift schemes (1,400ha) with modern lifting and high efficiency piped irrigation in the mid hill areas of Gandaki and Lumbini Provinces.
 - Improved on-farm irrigation will be supported at all the FMIS subprojects and Rajapur. Advanced on-farm irrigation including piped, micro irrigation and polyhouses will be supported at the hill lift sub projects.

- A small pilot community conjunctive groundwater program will be developed at three selected terai FMIS locations. The pilots will primarily concentrate on the electrification of farmers and other tubewells, with management oversight entrusted to the WUA and WUCs.

8 Output 2: Irrigation and Agriculture Agencies and Farmer Organizations Strengthened.

The output is designed to develop the management and institutional framework to ensure the project investments meet their targets of irrigation efficiency, productivity, and sustainability. The program will be implemented through a new and modernized approach to Crop and Water Management (ICWM) under climate change incorporating; sustainable OM of the irrigation infrastructure, empowered farmer organizations, integrated crop and water management, support the development of agri-enterprises, the market chain and access to finance. The output will strengthen the capacity of WRIDDs, Agriculture Knowledge Centers (AKC) and the irrigation and agriculture units at the local level in integrating irrigation management and agriculture development in overall FMIS sector. At the farm level, the project will; (i) strengthen Water User Associations (WUA) capacity to better operate and maintain irrigation systems; and (ii) establish in selected irrigation systems Water User Cooperatives (WUCs) who will have integrated irrigation management and agribusiness functions designed to maximize the opportunities of the irrigation investments including improved access to government subsidies and rural finance, support for the market chain, facilitate agro-enterprises, and network with private agri-enterprises. For the hill lift irrigation schemes the WUCs will operate as water utilities using metered charging systems and will collect fees to help meet full cost recovery for operating costs. The output develops new guidelines for ICWM including design, management and extension support and develop a road map for the long-term strategy for investment and management of the FMIS schemes in Nepal, The guidelines and parallel training modules will be used to support the project programs as well as wider training of irrigation and agriculture extension workers in Nepal.

- Training and strengthening of the devolved institutions with focus on the WRIDDs, AKCs and the irrigation and agriculture units at the local level.
- Strengthening of field level management including (a) strengthening of Water User Associations (WUA); and (b) explore for establishment of parallel new Water User Cooperatives (WUCs) who could enhance support in irrigation management operations and agribusiness functions. The WUCs will be initially piloted in 20 subprojects (12 hill lift, 3 terai FMIS, 2 hill FMS and 3 Rajapur). Subject to the results of the pilots and farmer interest the WUC program would be upscaled to other sub-projects. The farmers will work with the WRIDDs who will support them in the initial establishment and registration of the WUCs through the cooperative units at the local level. Irrigation management functions will be supported by the WRIDDs/hill lift offices, and agribusiness functions supported by the AKCs. The board of directors of the WUCs will initially incorporate the key representatives of the WUA.
- Enhanced Access to Rural Finance: The project will review current policy and programs for finance and subsidies for irrigation and agriculture. Based on the review the project will work with selected local administrations, lending agencies, private sector, WUA and WUC to train them in new and workable models to improve access and better target financial support for farmers to invest farm enterprises, on-farm irrigation, upgrading of irrigation. The program will also address alternative ways to meet financing costs for maintenance and repairs beyond the capacities of the farmers themselves.

9 Output 3: Modern agriculture and value chain facilities introduced: The program will address core weaknesses in agriculture including the limited uptake of modern agriculture technologies, lack of mechanization and agriculture facilities. The program will explore upstream and downstream opportunities to promote value addition including include demonstration and training in: (i) adopting climate-smart agricultural practices to improve crop yield, quality and production (ii) adopting advanced agricultural technologies

including modern farm machineries and equipment to enhance efficiency, productivity, and address labor shortages; (iii) the key role and value added of agriculture facilities including crop collection and processing, crop storage, buying and selling of inputs and outputs. The project will support the establishment of digital advisory services which through digital apps to mobile phones which will provide information on weather, marketing and agriculture advisory services which will improve farmers' operational efficiency and decision-making. As the farmers and farmer organizations lack access to finance the project will pilot the provision of partial financing to selected WUAs/WUCs who based on viable and sustainable business models want to invest in modern agriculture machineries and construction or rehabilitation of agriculture facilities including marketing, storage and processing. The WUA/WUC will be required to contribute 50% of financing for machinery and 15% for facilities. The program will include:

- Agricultural Technologies and Enterprise Development will focus on the interventions that will make the most impact to the needs of farmers in the sub-project areas and will include how to plan and manage cropping patterns using farmer field school approach, training and demonstrations including seed multiplications, green manuring, zero tillage, nature-based protection, and consolidated farming amongst others. The training will identify potential business opportunities and promote establishment of agriculture enterprises.
- Demonstrations of; (a) agriculture equipment and machinery to support mechanization to reduce reliance on scarce agricultural labor. (b) agriculture facilities to improve the marketing and processing including agriculture collection centers, grain storage, WUC storage facilities and polyhouses. The project will procure equipment to be used in the demonstrations which will be assigned to the WUAs/WUCs for future rental to farmers once the demonstrations are completed.
- Upscaling: Following on from the demonstrations the project will provide financial support for selected WUAs/WUCs to invest in modern agriculture machinery, polyhouses and agriculture facilities. Support will be provided to WUA/WUCs to construct or rehabilitate WUA/WUC facilities for crop storage and agro-processing etc. The aim will be to support selected investments that can demonstrate a viable and sustainable management and business model, be self-financing and can show significant impact to the viability of the subproject. The project will procure and assign equipment and facilities to the relevant WUA/WUC who will contribute 50% of the costs for machinery and 15% for the WUA/WUC facilities.
- Establishment of communications through digital advisory services to provide cost effective access to information to the dispersed and remote irrigation areas and stakeholders. The program will include targeted weather, climate change, marketing, and agricultural advisory services. The system will build on existing social media systems and include videos, SMS, and apps and with emphasis on user experience focusing on how to meet the needs of different demographic groups of farmers, ; government officers, private sector and small scale entrepreneurs.

Project Implementation

- 10 The project will be implemented in compliance with the Nepal's federal system and the project's implementation arrangements will be: (i) a central project management office (CPMO) in DWRI under the Ministry of Energy, Water resources and Irrigation (MoEWRI) will be responsible for overall project management including technical support to its Rajapur irrigation management office (RIMO) and the project implementation units (PIUs) in each of the Water Resources and Irrigation Development Divisions (WRIDD) of the provinces. CPMO will facilitate civil works procurement undertaken by DWRI, Hill lift implementation offices and RIMO, monitor project implementation, collect expenditure data from WRIDDs, Central

Agriculture Management Office (CAMO), Hill lift implementation offices and RIMO and prepare withdrawal applications and progress reports ; (ii) the AKCs under the DOAD of Provinces will implement agriculture development plan (ADP) in FMIS and HL and DOA of Federal government will establish implementation unit in Rajapur (Rajapur Agriculture Management Office, RAMO) to implement ADP in Rajapur Irrigation System, and AKC and RAMO support farmers and local government in climate resilient and modernized agriculture. A Central Agriculture Management Office (CAMO) under the federal Department of Agriculture will be responsible to coordinate with the AKCs and RAMO, provide capacity building support on ADP implementation and climate smart agriculture, collect project benefit monitoring data, collect statement of expenditures, prepare consolidated report of ADP progress, develop knowledge products and forward to CPMO. The implementation arrangement adheres to the principles of federalization with basic responsibility and accountability for selecting, preparing, procuring, and implementing work by the provinces, while technical backstopping and management support will be provided by the federal offices. Project management consultants will support the CPMO, CAMO and PIUs. A project steering committee will be formed chaired by the Secretary, MoEWRI, and members from the relevant federal and provincial ministries to provide policy guidance support to the project.

II TERMS OF REFERENCE FOR THE PIMS CONSULTING TEAM (FIRM)

1. Objectives of the Consultancy Services

- 11 The consulting firm will provide support services over a six-year period or till the project completion time, whichever is earlier, to the Central Project Management Unit (CPMO), Central Agriculture Management Office (CAMO), (Agriculture Office for Rajapur Irrigation System) RAMO, the Provincial Implementation Units (PIUs)- WRIDDs, AKCs (Province Level Agriculture Implementation Office), Federal Hill Lift offices of Gorkha and Butwal, and local government agencies to ensure that all the project activities and outputs are performed according to the project plans and the compliance of the loan agreements and covenants.

2. Scope of Services

- 12 The scope of the consultancy services will include, but not necessarily limited to, the following four main services.

(a) Strengthened Project Management

- (i) Support overall project implementation following agreed procedures and arrangements, and propose further improvements as required.
- (ii) Ensure timely delivery of project outputs with close collaboration with the project administration at different levels as well as the relevant line agencies.
- (iii) Support/ensure timely preparation and review of withdrawal applications, obtain project account statements.
- (iv) Support the project's procurement requirements including civil works contracts, vehicles and equipment, and procurement of equipment for demonstrations.

(b) Rehabilitation and Construction of Irrigation Systems

Prepare and support the activities under Output 1 including

- (v) Rehabilitation and upgrading of 100 plus FMIS schemes covering about 18,000 ha consisting of minimum 66 hill and 34 terai FMIS schemes. Of the 100 schemes 61 schemes have been designed and 39 plus remain to be designed. Designs will be prepared by the WRIDD offices and the consultant will be required to review the design and ensure quality control during implementation. The Construction of the sub-projects shall be through the WRIDD/ Hill lift offices and the consultant is required for construction supervision, quality control and support for procurement and contract management including works assigned to WUA.
- (vi) Twelve new pilot hill lift schemes covering 1400 ha will be constructed which abstract water from the river beds and pump up to the required static head to irrigate the command area. The consultant will review the existing designs, and recommend for new approaches and design wherever necessary for the hill lift schemes which includes intake design, pumps and electrification, reservoir, piped delivery and distribution systems. Intake design involves abstraction from the gravel river beds and will involve design of appropriate tubewell, gallery or sump well abstraction systems. The consultant will provide intensive construction support to the pilot hill lift offices to ensure quality control and testing of the groundwater intakes, reservoirs, pumps, delivery and distribution systems. In addition, the consultant is responsible to support for the procurement and contract management of hill lift sub-projects.
- (vii) The project will incorporate rehabilitation and upgrading of key components of Rajapur Irrigation project covering 14,500ha. The task includes design, construction supervision, quality control and support to procurement and contract management. The scope of the rehabilitation work includes i) upgrading of the Budhi Kulo approach channel-preliminary designs have been prepared but

the consultant is required to complete the surveys and review and adjust the designs as required; ii) upgrading of the Budhi Kulo Intake (designs completed); iii) Karnali river bank protection (designs completed); iv) main canal structures (designs completed); v) design works of the remaining branch canal structures (about 3/4th of the total structures) has to be prepared by the consultant. vi) rehabilitation of the Geruwa Khola intakes (designs completed) vii) study of possibilities of feeding water through Budi Kulo (preferably Gola branch canal) to Geruwa intake systems); and viii) procurement of excavators to support O&M (specifications to be prepared).

- (viii) Provide support for the program of on-farm irrigation. This will include preparation and support for the program of on-farm water management which will be implemented in all the FMIS schemes and Rajapur. In addition, the consultant will prepare the pilot programs of modern on-farm irrigation which will include pressurized irrigation (drip/sprinkler) to be demonstrated at selected hill lift sub-projects and pilot community conjunctive groundwater, selected terai FMIS locations with management through the WUA and WUC.
- (ix) The consultant has to prepare the '*Design Manual for Hill Lift Irrigation Schemes*' and get feedback from DWRI and correct it accordingly before its approval from the authority. The Design Manual shall include the selections of water acquisition, lifting arrangement with suitability of pump selection, delivery pipes, storage tanks, distribution system and other necessary structures including required information for the completeness of design manual. The consultant shall provide suitable templates of design, social and environmental checklist, appropriate options of cropping calendar, crop budget, economic analysis etc.

(c) Support for the Institutional Development Plan

To provide key support for implementation of the Institutional Development plan under Output 2 including;

- (x) Plan, implement and act as a resource person for the training to be conducted by PIMS, CPMO, CAMO and support the program of training and strengthening to the project and institutions with focus on the WRIDDs, AKCs at the local level.
- (xi) Design and support the planning and implementation of the program to strengthen field level management which will include
 - strengthening of Water User Associations (WUA); and
 - establishment of parallel new Water User Cooperatives (WUCs) who will support irrigation management operations and agribusiness functions.

About 20 WUCs will be initially piloted in FMIS, RIP and the hill lift schemes (pilot hill lift 12 schemes, hill FMIS 2 scheme, Terai 3 schemes and 3 in RIP). The consultant shall prepare a standard WUC by-laws and provide step by step procedure guideline of establishing WUC linking with WUA.

- (xii) Support establishment and development of communications through digital advisory services.
- (xiii) Support the program to improve access to rural finance through a review of ongoing credit and finance programs and piloting in selected sub-projects with improved procedures to access rural finance through partial investment subsidies.

(d) Support for the Agricultural Development Plan

To provide support for the implementation of the Agricultural Development Plan under output 3 including;

- (xiv) Organize/Support the program of training and demonstrations in Agricultural Technologies and Enterprise Development including seed multiplications, green manuring, zero/minimum tillage, nature-based protection and consolidated farming amongst others. The training will identify business opportunities and promote the establishment of agriculture enterprises.
- (xv) Provide support for demonstrations of agriculture equipment and machinery to support mechanization to reduce reliance on scarce agricultural labor.
- (xvi) Provide support for training and demonstrations of agriculture facilities to improve the marketing and processing including agriculture collection centers, grain storage, storage facilities and polyhouses.
- (xvii) Support the project to procure equipment to be used in the demonstrations which will be assigned to the WUCs/WUAs for future rental to farmers once the demonstrations are completed.
- (xviii) Support the program of upscaling of the demonstration that will be through Partial Investment Subsidies.

3. Reporting

- 13 The consultants shall prepare and submit the following reports to the CPMO at the times specified below:
- 14 **Inception Report:** to be submitted 6 weeks after the commencement of their services. The report shall describe the consultants' overall understanding of the project implementation procedures and arrangements and detailed plan to effectively deliver the required consulting services.
- 15 **Quarterly Progress Reports:** The reports shall briefly describe and include the project activities undertaken during the report period, disbursement and contract status, financial situation, progress of implementation of physical infrastructures, any changes in the implementation schedule, problems and constraints associated with project implementation and suggested remedial measures, planned activities and expenditure forecast for the next three-month period. The fourth quarterly progress report will be an annual report covering the entire one-year period.
- 16 **The Mid-term Review Report:** The consultants shall prepare and submit a Mid-term Review Report at the end of 36 (or as appropriate) months of project implementation period. The report will update the overall progress of implementation of various project components and will include the description of problems encountered in achieving the objectives, remedial measures adopted to address the problems, financial status of the Project, and suggestions for improvement of procedures/guidelines. The Mid-term Review Report should provide a clear picture of the project status, which will guide the ADB and GON to take corrective and appropriate steps for achieving the desired objectives of the Project in the remaining project period.
- 17 **Project Completion Report (PCR):** At the end of project period, the consultants shall prepare a Project Completion Report (PCR). The PCR will summarize, or accumulate as appropriate, the records of the four-monthly and annual reports. In addition, the PCR will analyze the constraints met in project implementation, measures adopted to resolve such constraints, document the achievements made by the Project, and suggest ways to improve implementation of such projects in the future. In short, the PCR will provide a brief but a complete picture of issues involved in project implementation.

18 The summary of deliverables in aligned with the report shall be as follows:

S.No.	Report	Expected output	Timeline	Remarks
1	Inception Report	Demonstrating consulting firm's understanding of ToR and ensuring plan of action and timeline for various activities	Within 6 weeks after issuance of notice to proceed this assignment	3 hard copies and electronic copy
2	Monthly progress Report	Covering the summary of the activities performed and mobilization during the month, problems encountered, solutions proposed/ adopted, corrective actions if required and the activities planned for the coming months	Within 7 th day of the following calendar month	3 hard copy and electronic copy
3	Quarterly progress Report	Covering the summary of the activities performed and mobilization and disbursement during the quarter problems encountered, solutions proposed/adopted, corrective actions if required and the activities planned and disbursement projected for the coming quarter	Within 10 th day of the following quarter	3 hard copies and electronic copy
4	Annual Progress Report	Covering the summary of the activities performed, disbursement achieved and mobilization status during the year problems encountered, solutions proposed/adopted, corrective actions if required and the activities planned and disbursement projected for the coming year	Every year within 15 th day of commencement of next year.	3 hard copies and electronic copy
5	Safeguard (Environmental, social and resettlement)	As per ADB's requirement	Starting from 3 months from the date of issuance of NTP	3 hard copies and electronic copy
6	Procedure guideline of establishing WUC in irrigation schemes	Guideline is prepared	Within 12 months after commencing of assignment	3 hard copies and electronic copy
7	Design manual of Hill lift irrigation projects	Guideline for designing hill lift project is prepared as per the requirement stated in scope of services	24 months after commencing of assignment	3 hard copies and electronic copy
8	Mid-term review report	Covering the summary of the activities performed, disbursement achieved and mobilization status during the	36 (or 1 month before the MTR mission as appropriate)	3 hard copies and electronic copy

		elapsed time of the project problems encountered, solutions proposed/adopted, corrective actions if required and the activities planned and disbursement projected for the coming period	months after commencing of assignment	
9	Draft Project Completion Report (PCR)	In ADB format covering (i) a concise description and assessment of the project from identification to completion, (ii) evaluating the adequacy of preparation, design, implementation arrangement, and performance of the IAs and ADB, including how problems were handled, whether they were foreseen as potential risk and the adequacy of the solutions adopted during the implementation, (iii) a preliminary evaluation of initial operation, and achievement and sustainability of the benefits, (iv) a preliminary evaluation of the extent of the achievement of the outcome of the project and the project contribution to achieving the expected impact, (v) suggest follow up actions, required during the project operations and, (vi) make recommendation based on the evaluation and lessons for future implementation and operations, as well as improvements in related ADB procedures.	Within 30 days of completion of consulting services assignment	3 hard copies and electronic copy
10	Final PCR Completion Report	Incorporating the comments of CPMO, CAMO, ADB and other stakeholders	Within 30 days of issuance of the client's comments.	3 hard copies and electronic copy
11	Any other reports as needed and requested by the Client and as defined in scope of ToR		As and when required	

19 Prior approval from Project Director of CPMO is mandatory for mobilization and demobilization of all key and non-key experts.

4. Inputs to be provided by the Employer

20 The Employer will provide the following inputs:

- (i) Office space in CPMO, CAMO, Provincial Offices, RIMO and HLIP (Gorkha).
- (ii) The relevant and available reports, studies and design.
- (iii) Office facilities, such as computers, printers, photocopiers, UPS, telephone, fax with consumables shall be covered from the PS.
- (iv) Cost of activities covered on the PS shall be spent only on the CPMO prior approval.
- (v) Hiring charge of Vehicle/ Motorbike
 - The consultant has to manage the 4 WD (manufactured date not before 2020 A.D. & not less than 2000 cc) vehicles as required for uninterrupted field movement. Each of the three provincial office, Hill Lift office, Rajapur office will be equipped with at least one vehicle and central office shall be equipped with at least two vehicles (total 7 nos). The vehicles shall be at the allotment of each unit office for at least 8 months per year. The cost of hiring vehicles shall cover all the expenses of driver, running cost and maintenance throughout the contract period.
 - Similarly, the consultant has to manage 15 Nos. of motorbike (not less than 150cc) for at least 8 months per year. The allocation of the motorbike shall be decided by CPMO during the implementation. The cost of hiring motorcycles shall cover all the running cost and maintenance throughout the contract period
- (vi) The consulting firms shall price all cost, direct and indirect that consulting firm envisages to incurred for the performance of its services (except those stated above) in its financial proposal. No additional payments shall be made for such expenses.

5. Payments

For the invoicing of staff members, payments will be made on a monthly basis after submission of timesheets and monthly report. Provisional sum will be paid based on submission of invoices.

III TERMS OF REFERENCE OF CONSULTANT TEAM

- 21 A national consulting firm(s) will provide the consulting services. It is estimated that 594 person-months of key expert's services will be required in national consultants, as well as 242 person months of non-key experts. The expertise of the consultants and the expected input periods of each are summarized in Table 1 and described below.

Table 1: Summary of the Consulting Inputs, p-m

A	Central Level CPMO	Key Experts	Remarks
1	Irrigation Specialist (Team Leader)	24.0	
2	Sr. Irrigation Design Engineer (DTL)	56.0	
3	Agriculture Specialist	28.0	
4	Hydrogeologist	6.0	
5	Mechanical Engineer	6.0	
6	Procurement and Contract Management Specialist	8.0	
7	Digital Communications Consultant	12.0	
8	Social Development Specialist	12.0	
9	Environment Safeguards Specialist	12.0	
10	Financial Management Specialist	10.0	
11	Unallocated Key experts	15.0	
	Sub Total Central	189.0	
B	Hill Lift Offices		
1	Hill Lift Irrigation Design/Quality Control Engineer	35.0	
2	Agriculture Specialist	32.0	
3	Social Development Specialist	15.0	
	Sub Total Hill Lift	82.0	
C	Rajapur Irrigation Management Office		
1	Irrigation Planning and Design/Quality Control Engineer	35.0	
2	Agriculture Specialist	30.0	
3	Social Development Specialist	12.0	
	Sub Total Rajapur	77.0	
D	Provincial Offices (Koshi, Madesh, Bagmati),		
1	Irrigation/ Quality Control Engineer (3 positions)	120.0	
2	Agriculture Specialist (3positions)	90.0	
3	Social Development Specialist (3 positions)	36.0	
	Sub Total 3 Provincial Offices	246.0	
	Total Key Experts	594.0	
E	Non-Key Experts		
1	Associate Experts	222.0	
2	Unallocated Non-Key Experts	20.0	
	Sub Total Non-Key Experts	242.0	
	Overall Total	836.0	

A. CPMO Office

1. Irrigation Specialist/Team Leader

- 22 The Irrigation Specialist/Team Leader will work closely with the Project Director and his/her team will be responsible for overall management of the consulting team to achieve the project's outputs including providing the four main services described above. The specialist will have a master's degree in civil engineering/irrigation/water resource management or in related field, and will have 15 years of experience with 12 of those years leading the implementation of the irrigation projects. Must be fluent in written and spoken English and an ability to draft concise reports; good communication skills; excellent computer skills is essential. Responsibilities will include but not limited to the following.
- (i) Lead the PIMS consulting team, supervise and guide the individual specialists ensuring that consultant resources are effectively used and engaged in project activities to collectively deliver the required services and outputs;
 - (ii) Support for the Plan, design and implementation of overall project management.
 - (iii) Advise the Project Director and the Agriculture Project Manager. Coordinate all the project activities including implementation of the infrastructure, institution and agriculture development plans.
 - (iv) Assist CPMO in maintaining, updating and effectively using the management information systems (MIS) established by the predecessor project to ensure monitoring and quality control of subproject implementation through sound reporting, recording, and advising mechanisms on all processes and activities.
 - (v) Assist the various project institutions at different levels to implement the agreed detailed subproject implementation systems, procedures, and arrangements, by monitoring and advising on the performance;
 - (vi) Ensure technical quality of sub-project preparation and implementation including engineering aspects and the social agendas such as gender, ethnic minorities, disadvantage groups and other vulnerable people;
 - (vii) Review and advise on individual subproject detailed design reports and recommend their approval by participating in the Project Appraisal Committee;
 - (viii) Undertake and participate in training needs survey, and develop training programs and materials to be used in the project management training of the personnel in DWRI, DOA, Provincial Level, Local Government, WUAs and WUCs.
 - (ix) Assist CPMO and CAMO in preparing annual training plan and implementing the programs to effectively meet the needs of the Project staff at all levels;
 - (x) Prepare project related contract awards and disbursements reports with projections;
 - (xi) Working with the various consultants, review current training manuals/materials related to the development of modern on- farm water management and develop guidelines for on-farm water management, assist the project offices and provincial teams in delivery of on- farm water management activities including management, operation and maintenance, assist and coordinate on-farm water management activities with the agricultural component.
 - (xii) Prepare inception, annual reports, detailed mid-term review report, and project completion reports, and other reports as required by CPMO.
 - (xiii) Finalize the *Design Manual for Hill Lift Irrigation Schemes* and submission for approval.
 - (xiv) Finalize the remaining design of Rajapur Irrigation system.
 - (xv) Finalize procedure guidelines of WUCs formation in selected irrigation schemes prepared by agriculture specialist.
 - (xvi) Any other necessary works to meet the objective of the consulting service.

2. Sr. Irrigation Design Engineer/ Deputy Team Leader

23 The Sr. Irrigation Design Engineer will support the outstanding irrigation design work including; design support as well as construction supervision works to be implemented by WRIDDs for the 100 plus FMIS systems and full responsibility for outstanding design work and construction supervision for the Rajapur irrigation sub-project and Hill Lift sub-project. The Engineer will have a master's degree in civil engineering/irrigation/water resource management or in related field, and will have 15 years of experience with 10 of those years leading the design, implementation and quality control of irrigation projects. Must be fluent in written and spoken English and an ability to draft concise reports; good communication skills; excellent computer skills, working experience with computer-based design including AutoCAD is essential. The consultant's responsibilities will include but are not limited to the following.

- (i) Works and exercise his role as PIMS representative in the absence of Team leader and or during the leave period of TL. DTL will also be responsible for the tasks assigned to TL.
- (ii) Review and finalize the designs of outstanding works for the Rajapur irrigation project as prepared by Rajapur Planning, design/quality control Engineer. Similarly, review design of remaining HLIP and FMIS.
- (iii) Monitor the procurement, contract management and construction stages of each sub-project. Assist in resolving contractual issue and dispute resolutions during implementation.
- (iv) Assist WRIDD/RIMO/HL engineers and sub-engineers in putting in place a system of effective supervision of construction work carried out by contractors and WUAs.
- (v) Prepare detailed designs, specifications and BOQs for all the outstanding work at FMIS, HLIP and Rajapur;
- (vi) Review the DDR and provide support to the WRIDD offices to for batch 2 sub-projects (39 plus FMIS)
- (vii) Support the preparation of the design and specifications for the demonstrations of agricultural facilities under output 3.
- (viii) Review the overall planning and designs prepared for the 12 hill lift schemes. Also, to review the performance and lessons learnt from other recently constructed hill lift schemes in Nepal.
- (ix) Prepare detailed designs for the hill lift schemes including layouts, drawings, specifications and costed bill of quantities.
- (x) Collect information as required in the DMF table and enter it in the MIS system.
- (xi) Prepare the designs working closely with the electrical engineer and hydrogeologist to support the planning and design of around 300 ha of pilot conjunctive groundwater including electrification of tubewells in Terai sub-projects.
- (xii) In consultation with farmers prepare the designs and specifications for demonstrations of modern-on farm irrigation at the hill lift sites.
- (xiii) Prepare monthly and quaternary report and support TL in preparing other reports as required.
- (xiv) Provide support for the O&M of the completed hill lift schemes as required.
- (xv) Support to provide training to the WUA, Sub-project Monitoring Committee (SMC), monitor their activities and follow up on any complaints received.
- (xvi) Finalize design manual for hill lift irrigation in consultation with TL.
- (xvii) Any other necessary works to meet the objective of the consulting service.

3. Agriculture Specialist

- 24 The Agriculture Specialist will work closely with the Project Director and the CPMO office as well as the Project Manager in the CAMO office. The specialist will have overall responsibility to support the implementation of the institutions and agriculture development programs. The specialist will have a master's degree in agriculture or an equivalent related field, and will have 12 years of general experience and 8 years of project experience relating to agriculture. The consultant should preferably have experience in establishing and supporting cooperatives as well as program for agriculture support and credit. Must be fluent in written and spoken English and an ability to draft concise reports; good communication skills; excellent computer skills etc. The consultant's responsibilities will include but are not limited to the following.
- (i) Lead the agriculture and institution programs by supervising and providing key support to the agriculture specialists in the province and sub-project offices.
 - (ii) Maintain coordination and advise the Agriculture Project Manager in the CAMO office for effective implementation of agricultural activities.
 - (iii) Establish the arrangements using MIS systems for monitoring and evaluation of the various agriculture institutions and agriculture programs.
 - (iv) Work with the various consultants and line agencies to implement the program of training and institutional development of the devolved institutions including the irrigation and agriculture units at the provincial and local level.
 - (v) Lead the program of strengthening of the field level management including strengthening of the Water User Associations as well the piloting and upscaling of Water User Cooperatives,
 - (vi) Prepare guideline of establishing WUC in irrigation schemes.
 - (vii) Working closely with the digital communications specialist to support the program to establish digital advisory services and development of communications.
 - (viii) Lead the implementation of the agricultural development plans; the specialist will work closely with the Agriculture Specialists in the province and sub-project offices as well as the AKCs including the program of agriculture training and demonstrations.
 - (ix) Provide the lead support for the program of partial subsidies for farmers and small agricultural enterprises. The tasks will include design the detailed framework and establishing the mechanisms for approvals, allocation of funds and disbursement arrangements.
 - (x) The consultant will report to TL/DTL.
 - (xi) Any other necessary works to meet the objective of the consulting service

4. Hydrogeologist

- 25 The hydrogeologist will be responsible for the design and supervision of the intakes for the hill lift irrigation systems as well as the pilot electrification of tubewells at Terai Schemes. The hydrogeologist will have a master's degree in geology/engineering geology /groundwater hydrology or equivalent in related field, and will have 12 years of general experience and 8 years specific experience in the planning and design of groundwater irrigation or water supply projects. Must be fluent in written and spoken English and an ability to draft concise reports; good communication skills; excellent computer skills. The consultant's responsibilities will include but are not limited to the following;
- (i) Review progress and performance of the drilling and tubewell installation program at the sites. Using the results of exploratory drilling, prepare the detailed design of production tubewells to meet the design flows for each schemes including the

- number of tubewells, depths, diameters and lengths of screen and casing and specifications for the pumps.
- (ii) Where tubewells are not able to meet the design discharge requirements, work with design engineer to assess alternatives including sump well or galleries or any other innovative techniques and design the alternative proposed techniques.
- (iii) Support concerned PIUs in planning and design of the intakes including supervision and support tubewells drilling works.
- (iv) Support the planning and design of the pilot community groundwater programs in selected Terai schemes. Provide support to design cost effective farmer wells using electric pumps. Assess groundwater balance and design for safe yield.
- (v) Provide support to the institutional development consultants in defining the role of WUC/WUAs for sustainable management and conjunctive use of surface and groundwater.
- (vi) Mobilize in other related field as required and advised by CPMO.
- (vii) The consultant will report to TL/DTL.
- (viii) Any other necessary works to meet the objective of the consulting service

5. Mechanical Engineer (pumps and gates)

- 26 The Mechanical Engineer will be responsible to support design and supervision of the installation of the intake gates at Rajapur IP and support in installation of pumps in the hill lift systems. The mechanical engineer will have a master's degree in mechanical engineering or related field, and will have 12 years of general experience and 8 years of specific experience in design of mechanical and electro-mechanical gate systems. Must be fluent in written and spoken English and an ability to draft concise reports; good communication skills; excellent computer skills, AutoCAD is essential. Responsibilities will include but are not limited to the following.
- (i) Review the detailed design and drawings of hydromechanical components (mechanical steel structures such as Gates, Stoplogs, Deflector, Trash racks, hoisting systems and accessories etc.);
 - (ii) Supervise, monitor and assist in overall technical aspects of erection and installation of hydro mechanical component as per design standard and technical specification.
 - (iii) Review the quality reports submitted by the contractor and instruct for the necessary modifications or corrections if required
 - (iv) The consultant will report to TL/DTL.
 - (v) Any other necessary works to meet the objective of the consulting service

6. Procurement and Contract Management Specialist

- 27 The Procurement and Contract Management Specialist will be responsible to support and train the CPMO and PIU offices in procurement and contract management. The specialist will have a Master degree with 12 years' general experience and 8 years of specific experience in the field of procurement, particularly of open competitive bidding of civil works and goods, and community procurement. Experience in procurement under projects assisted/funded by Development Partners, ADB or World Bank is essential. Responsibilities will include but are not limited to the following
- (i) Prepare clear guidelines and associated templates for the PIUs using community contracting and open competitive bidding (OCB) for civil works.
 - (ii) Train CPMO, CAMO and PIUs on correct tender procedures and provide support for contract supervision to ensure the procedures are followed.
 - (iii) Train selected CPMO and PIUs staff to serve as procurement specialists for the project who will: (a) prepare all individual tender documents and review

- procurement done at PIUs prior to procurement; (b) be responsible for tender opening and evaluation; (c) prepare the contract documents and assist the AKCs in preparing the required documents for procurement of agriculture equipment
- (iv) Assist the CPMO in overseeing the preparation of bidding documents, the procurement process, bid evaluation and prepare recommendations of contract award. Support the checking of documents before submission to ADB.
- (v) Supervise procurement process and contract management and submit report findings to CPMO for follow-up.
- (vi) Prepare a comprehensive template for the enlisting of the contract packages carried out under the project and prepare a periodic record of their progress and ensure the reflection of these progress in trimester progress report.
- (vii) Assist the CPMO in building the capacity of PIUs staff in contract management, including preparation of guidelines/minimum standards, a training program, and a monitoring program for DWRI management. The guidelines should include procedures to be followed when contractors under-perform, including guidance on appropriate remedial actions.
- (viii) The consultant will report to TL/DTL.
- (ix) Any other necessary works to meet the objective of the consulting service

7. Digital Communications Specialist

- 28 The digital communications specialist will be responsible for the development and implementation of the program for establishing digital advisory services to provide key information to farmers, WUAs/WUCs and other stakeholders. The specialist will have Master's degree in information technology/digital communications or related field and will have 12 years general experience and 8 years specific experience in the design and/or implementation of digital communications or development of digital communications to rural communities. Must be fluent in written and spoken English and an ability to draft concise reports; high communication skills; high level computer skills including the development of visual and digital communications, applications of social media and the development of training materials. High level experience with computer-based graphic design and development with communication technologies is essential including social media, video, sms and apps. Responsibilities will include but are not limited to the following:
- (i) Carry out a review of current communication systems being used for irrigation and agriculture in Nepal.
 - (ii) Identify potential areas where the project's digital communications strategy can potentially make the most impact and value added including the scope to build on existing initiatives as well as develop new programs.
 - (iii) Develop an overall communications plan for the project and demonstrate the role of digital communications to complement traditional systems.
 - (iv) Design digital advisory services to provide cost effective access to climate, irrigation and agriculture information disbursed to remote irrigation areas and different demographic groups of farmers and stakeholders, government officials, private sectors and small-scale entrepreneurs through development of application software.
 - (v) Develop the digital advisory system with necessary modules and functionality for managing and analyzing relevant data.
 - (vi) Ensure that the system is user friendly, visually appealing and offers a seamless user's experience.

- (vii) The plan should include the institutional framework, type of technologies to be used, source and types of communications and identifying the proposed recipients. The plan will include the costs of establishing the systems and potential sources of revenue and finance to ensure sustainability after the completion of the project.
- (viii) Once approved, the digital advisory systems will be initially piloted in 3 districts over 2 years. Based on lessons learnt, the program will be upscaled to all the districts within the project area over four years.
- (ix) Lead to prepare quality communication materials including audio visual materials and videos of the demonstrations that can be disseminated through the digital advisory services.
- (x) The consultant will report to TL/DTL.
- (xi) Any other necessary works to meet the objective of the consulting service

8. Social Development Specialist

29 The social development specialist will be responsible to ensure that the project's social safeguards, social mobilization and social interventions are planned and implemented as per the project's requirements. The specialist will be responsible to the Team Leader and the Project Director. The specialist will be based in the CPMO and make frequent trips to provide guidance and supervision to the regional specialists. The Social Development Specialist will have a Master's Degree in social sciences or related fields and have 12 years of general experience and 8 years specific experience in participatory community development, knowledge of social inclusion issues in the sector and experience in undertaking GESI trainings at different levels; experience in promoting women's advancement and gender equality; knowledge in the area of rural development; excellent computer skills and excellent communication and interpersonal skills. Also have and be proficient in written and spoken English with an ability to prepare clear and concise reports. Responsibilities will include but are not limited to the following;

- (i) Work in close collaboration with the project implementation team to assess the needs and requirements for social interventions during the implementation period and provide necessary support to plan and implement the social development activities including social mobilization, preparing institutional development plan.
- (ii) Prepare communication awareness and participation plan in coordination with Environment, Social Safeguard and Climate Change Branch of DWRI. Take the lead on gender and social inclusion, social safeguards, consultation and participation.
- (iii) To be primarily accountable for the implementation and reporting of GESI plan, voluntary land donation, due diligence framework and the Indigenous Peoples planning to the Project Director and Team Leader on a quarterly basis.
- (iv) Develop a module for capacity development training to all project staffs in GESI mainstreaming and provide the same at the federal, provincial and sub-project levels.
- (v) Assess the quality and completeness of disaggregated data being gathered to assess project benefits and impacts for each sub-project;
- (vi) Review the project's MIS system for socio-economic data collection and ensure system updates to support M&E of social aspects;
- (vii) Prepare annual in-depth project M&E report discussing impacts from gender, ethnicity, and poverty reduction perspectives, utilizing qualitative instruments and case studies. The reports will include feedback from project beneficiaries and highlight successes and lessons learned.

- (viii) Support and supervise the work of the provincial/federal offices Social Development Specialists and provide necessary technical backstopping.
- (ix) Prepare, update and ensure the timely disclosure of draft and final RP and IPP in locations and formats accessible and understandable to the public and affected persons.
- (x) Assist CPMO to coordinate across the project components in the overall management, implementation, monitoring and reporting of social safeguards compliance. Provide oversight on the social safeguard management aspects of projects and ensure that RP and IPP and impact avoidance measures outlined in the RF are implemented by project implementation offices and contractors.
- (xi) Review, monitor, and evaluate the effectiveness of the implementation of RP and IPP, and recommend necessary corrective actions.
- (xii) Facilitate as a resource person in social safeguards training activities conducted by CPMO for the project implementation offices, contractors, and WUAs for capacity building to implement the RP and IPP.
- (xiii) Guide the CPMO and other project implementation offices in addressing any grievances brought about through the grievance redress mechanism in a timely manner.
- (xiv) Consolidate monthly and quarterly social safeguard monitoring reports from FMIS, HLIP and RIP and submit quarterly and semi-annual social safeguard monitoring reports to CPMO.
- (xv) Guide the CPMO to prepare and implement a community awareness and participation plan and support in preparing other information and campaign materials.
- (xvi) Identify any non-compliances and assist in preparing time-bound corrective action plans, if and as required.
- (xvii) The consultant will report to TL/DTL.
- (xviii) Any other necessary works to meet the objective of the consulting service

9. Environmental Safeguards

30 The Specialist will have a master degree in environmental science or related field with 12 years of general working experience and have 8 years of specific experience in environmental safeguards monitoring in implementation of water resources related projects. Fluency in written and spoken English and an ability to draft concise reports; good communication skills; computer proficiency is essential. The Specialist will be responsible to undertake the following activities.

- (i) The Environment Specialist (ES) will be responsible to undertake the safeguards monitoring and reporting activities, as described hereunder, following the Environment Protection Act, 2019 (EPA), and Environment Protection Rule, 2020 of the Government of Nepal (GoN) (as amended from time to time) and in accordance with the Safeguard Policy Statement (SPS), 2009 of ADB and the project EARF.
- (ii) The ES will support the CPMO in overall environmental safeguards management, quality assurance and reporting and support PIUs in ensuring compliance with the environmental management plan (EMP) requirements.
- (iii) Thoroughly review the existing IEE, EMP and EARF of FMIS Sub projects, Hill Lift Irrigation Sub projects and Rajapur Irrigation Project. Work closely and transfer knowledge to the staff of Environment and Social Safeguards of DWRI while undertaking all safeguards activities in the project;

- (iv) Support each PIUs to assign a focal person for safeguards and train the person in environmental compliance monitoring by filling environment monitoring checklists and submit a monthly report to CPMO;
- (v) Train PIUs focal personnel to collect site-specific secondary and primary data on the physical, biological, socio-economic and cultural environment of the sub-project areas. Use checklist, questionnaire and participatory tools for collection of baseline data for the update and preparation of IEE;
- (vi) Develop a field monitoring checklist and a template of safeguards reporting in periodic progress reports and train quality control engineers in routine compliance monitoring;
- (vii) Assess institutional capacity to implement EMP, EARF requirements, and GRM at central and local levels, and conduct necessary capacity strengthening orientation and training to the PIUs.
- (viii) In coordination with Social Development Consultant, support the PIU staffs in establishing a GRM in the project. Prepare a flyer on GRM and train project staff in complying a process while addressing public grievances;
- (ix) Prepare a template of annual safeguards compliance monitoring report. Collect monthly monitoring checklist from PIUs safeguards focal person and prepare annual safeguards compliance monitoring report;
- (x) Ensure that EMP recommended activities are all implemented in the project. Ensure required costs are included as BOQ item. Attach copy of EMP to the contract agreement document of the contractor. Periodically orient contractor's staff in complying to the EMP requirements;
- (xi) Periodically input environment related information in the automated software monitoring system prepared by ADB;
- (xii) Monitor safeguards compliance of the FMIS, Hill Lift Schemes and Rajapur Project and prepare semi-annual environmental compliance monitoring report;
- (xiii) Undertake other works as advised by the TL/DTL or the CPMO.
- (xiv) The consultant will report to TL/DTL.
- (xv) Any other necessary works to meet the objective of the consulting service

10. Financial Management Specialist

- 31 The Financial Management Specialist will have a master degree in management/accountancy or related field, responsible to support the establishment and implementation of the project's financial accounting systems. The consultant will report to the Team Leader and the Project Director. The specialist will have a general experience of 12 years and specific experience of 8 years in financial management. The consultant should have a broad knowledge base and experience in GON and development partner supported project accounting and financial management system. The consultant's responsibilities will include but are not limited to the following;
- (i) Monitor project financial disbursement and recommend ways to facilitate and streamline Government administrative procedures for disbursement;
 - (ii) Provide training to CPMO, CAMO and PIUs heads and account staffs on project budgeting, accounting, reporting and SOE procedures as given in the Project Administration Manual and Operations Manual;
 - (iii) Review current project financial accounting system at the CPMO, RIMO and PIUs level and propose improvements (computerized project accounting system);
 - (iv) Provide inputs to the cost estimation process;
 - (v) Assist the CPMO and CAMO in operating a system of preparing and reporting project financial statements on a quarterly basis, and consolidating financial statements for the entire Project;

- (vi) Assist the CPMO and CAMO in operating the system of comparing the financial statements against physical progress and contractual obligations, analyzing key variances and recommending appropriate actions and measures, and prepare quarterly monitoring reports;
- (vii) Assist CPMO and CAMO to develop project implementation monitoring systems and provide support in developing their capacity in financial management;
- (viii) Assist CPMO and CAMO to prepare annual program and budget of the project.
- (ix) The consultant will report to TL/DTL.
- (x) Any other necessary works to meet the objective of the consulting service.

B. Hill Lift Offices

1. Hill Lift Irrigation and Quality Control Engineer

- 32 The hill lift irrigation and quality control engineer will have overall responsibility to support the construction, commissioning, and establishing sustainable management of the pilot hill lift irrigation systems. The engineer will have responsibility to ensure the quality control of the piped irrigation systems of pumped and piped water systems including laying, testing of pipes, electrification, pumps and transmission and construction and testing of tubewells. The engineer will also support the agriculture specialist in the establishing and developing long term sustainable management of the completed schemes including ensuring targets of cost recovery of MOM are met. The engineer will have a master's degree in civil or irrigation engineering or related field, and will have 12 years of general experience and have 7 years of specific project experience in piped irrigation or hill lift irrigation or piped water supply systems including pumps, pipes, electrification or experience in design and construction of irrigation system. Responsibilities will include but are not limited to the following;
- (i) Prepare detailed designs, specifications and BOQs for all the outstanding work of HLIP in consultation with TL and DTL and assist implementing agency and CPMO for its approval.
 - (ii) Prepare draft of the *Design Manual for Hill Lift Irrigation Schemes*.
 - (iii) Develop training materials to be used in the design and quality control training of project office personnel, WUA and other stakeholders and provide training on best construction practices;
 - (iv) Assist project office engineers and WUAs/WUCs to jointly identify maintenance requirements for the post-construction period;
 - (v) Prepare construction related reports as required by project management including bidding and construction stages of each sub-project and track in the MIS;
 - (vi) Monitor construction activities ensuring that (i) effective supervision of works by HLIP supervisor/ engineer, (ii) the contractor has a capable manager on site, (iii) proper construction practices are being followed, and (iv) the design is being followed and quantities checked;
 - (vii) Assist CPMO in construction monitoring and quality control.
 - (viii) Support PIUs in verification of contractors' final payment certificate.
 - (ix) Work closely with the design engineer and hydrogeologist on the planning, design and bidding of the hill lift schemes.
 - (x) Work closely with the hill lift project offices to support the construction supervision and management of the HLIP.
 - (xi) Work closely with the digital communication specialist to prepare and implement a comprehensive communication plan for the hill lift projects including preparation

of asset management plan (AMP), setting out the post construction plans to operate and maintain the systems and build up intensive agriculture.

- (xii) Work with the Agriculture specialist to strengthen the WUA and establish new Water User Cooperatives.
- (xiii) Prepare on -farm management plan and support the program of demonstrations of the modern on-farm irrigation (pipes, micro irrigation etc.) as well as upscaling of modern on-farm irrigation through partial investment subsidies.
- (xiv) Support the WUA/WUC to select and train operators to manage the completed systems.
- (xv) Assist project office engineers and sub-engineers in putting in place a system of effective supervision of construction work carried out by contractors and WUAs;
- (xvi) Work with other specialists and the WUA and WUC, Prepare sustainable and effective management, operation and maintenance (MOM) plan for the hill lift schemes.
- (xvii) Prepare construction related reports as required by project management.
- (xviii) The consultant will report to DTL
- (xix) Any other necessary works to meet the objective of the consulting service

2. Hill Lift Agriculture Specialist

33 The Hill Lift Agriculture Specialist will have a key role to support the implementation of the agriculture development programs in the hill lift projects. The specialist will have a master's degree in agriculture or an equivalent related field and will have 12 years of general experience and have a specific experience of 7 years relating to agriculture development including the establishment of high value cropping and marketing. The consultant should have experience in establishing and supporting cooperatives as well as program for agriculture support and credit. Must be fluent in written and spoken English and an ability to draft concise reports; good communication skills; excellent computer skills, working experience in MIS and work planning systems are essential. Responsibilities will include but are not limited to the following.

- (i) Lead the agriculture programs for the hill lift projects.
- (ii) Work closely with the AKCs and the HLIP to implement the program of training and institutional development of the devolved institutions including the irrigation and agriculture units at the local level.
- (iii) Lead the program of strengthening of the field level management including strengthening of the WUAs as well as establishing a WUC in each of the hill lift schemes.
- (iv) Provide key support for the implementation of the agricultural development plans in the HLIP; the specialist will work closely with the PIUs including the program of agriculture training and demonstrations, provision of support subsidies to promote agriculture enterprises;
- (v) Guide planning and implementation of ADP for crop diversification and commercialization with effective marketing support towards maximizing on-farm income;
- (vi) Collect information for M&E of the agricultural activities at ISP level and suggest further improvement as necessary;
- (vii) Establish the arrangements using MIS systems for monitoring and evaluation of the various institution and agriculture programs and continuously update the MIS input for M & E of the agricultural activities.

- (viii) Support central Agriculture specialist in preparation of procedure guidelines of WUCs formation in selected irrigation schemes;
- (ix) The consultant will report to Central Agriculture specialist.
- (x) Any other necessary works to meet the objective of the consulting service.

3. Hill Lift Social Development Specialist

34 The Hill Lift Social Development Specialist will be responsible to ensure that the social safeguards, social mobilization and social interventions in each hill lift sub-project are planned and implemented as per the project's requirements. The specialist will be based in the Hill Lift Office and will make frequent trips to each sub-project, provide guidance and supervision to the sub-projects and provide support to the Junior Technicians/Social Mobilisers in each sub-project. The Social Development Specialist will have a master's degree in social sciences or related fields; 12 years of general experience and 7 years of specific experience in relevant field (; excellent computer skills and excellent communication and interpersonal skills. The specialist will have experience in M&E systems and comprehensive knowledge of data management. Also have and be proficient in written and spoken English with an ability to prepare clear and concise reports. Responsibilities will include but are not limited to the following;

- (i) Work in close collaboration with the Agriculture Specialist to develop and unified approach to the initiatives for institutions, agriculture and social mobilization;
- (ii) Support the project implementation teams for each hill lift sub-project to assess the needs and requirements for social interventions during the implementation period and provide necessary support to plan and implement the social development activities including social mobilization;
- (iii) Take the lead on gender and social inclusion, social safeguards, consultation and ensuring adequate stakeholder participation in each sub-project;
- (iv) Carry out capacity development training and provide support to all project staff in GESI mainstreaming.
- (v) Review the existing ISF collection and utilization plan of the WUA and prepare a comprehensive strategy for fixing, collecting and utilizing ISF for ensuring sustainable O & M plan. Prepare institutional development plan for HLIP project.
- (vi) Collect and input the information into the MIS at the HLIP and the structure of data to be collected disaggregated by sex, caste and ethnicity that provides information on the indicators established in the design and monitoring framework (DMF);
- (vii) Prepare a comprehensive GRC guideline for HLIP and support in forming GRCs and mechanism for grievance redress policy as per the guideline at the subproject and SMC level, ensuring it is fully functional prior to or during the award of the first contract, or within three months of loan effectiveness, whichever is earlier. Address any grievances brought about through the grievance redress mechanism in a timely manner as per the RF.
- (viii) Analyze socio-economic data of all monitoring reports, as well as undertake quarterly specialized GESI monitoring.
- (ix) Update sample RP of HLIP in Baireni based on detailed designs and prepare new RPs for remaining HLIPs in accordance with the RF prepared for the project.
- (x) Ensure that all conditions in the RP and IPP are implemented and/or complied with before the execution of project works.
- (xi) Supervise voluntary land donation and temporary economic impacts with crop compensation and provide any assistance required for conducting independent third-party verification.

- (xii) Support HLIP implementation offices in supervising voluntary land donation and compensation-related surveys, including: (a) census/inventory of loss surveys for permanent and temporary land use/impacts; and (b) socio-economic surveys of affected landowners donating lands for the reservoir tank if required.
- (xiii) Assist implementation offices in the implementation of the community awareness and participation plan in the HLIP area.
- (xiv) Conduct continuous meaningful consultations and information disclosure with the support of the Community organizer.
- (xv) Organize courses for training contractors, preparing them for resettlement RP implementation, social safeguard monitoring requirements, and taking immediate action to mitigate IR impacts during RP implementation.
- (xvi) Ensure timely submission of monthly, quarterly progress reports, and semi-annual social safeguards monitoring reports to CPMO, with the support of implementation offices.
- (xvii) Identify any non-compliances and assist in preparing time-bound corrective action plans, if and when required.
- (xviii) Maintain and update project component-wise database of resettlement/grievance-related issues and inform implementation offices for timely actions.
- (xix) Support CPMO/CAMO/HLIP implementation offices/AKC/WUA in all awareness, training, and capacity-building activities related to social safeguards and GESI-AP as a resource person.
- (xx) The consultant will report to Central Social Development specialist.
- (xxi) Any other necessary works to meet the objective of the consulting service.

C. Rajapur Irrigation Project

1. Rajapur Irrigation Planning and Design/Quality Control Engineer

35 The Rajapur Irrigation Planning and Design/Quality Control Engineer will have overall responsibility to prepare the design for approval and supervise the construction works at the Rajapur. The engineer will have a master's degree in civil or irrigation engineering or related field, and will have 12 years of general experience and 7 years of specific experience in design and construction of large/medium scale irrigation systems. Responsibilities will include but are not limited to the following;

- (i) Prepare and finalize the designs of outstanding works for the Rajapur irrigation project including the approach channel and assess options for the design including the trash deflector in consultation with RIMO and in guidance of TL and DTL.
- (ii) Supervise the construction stages of the project and track in the MIS;
- (iii) Supervise the construction activities ensuring that (a) effective supervision of works by RIMO supervisor/ engineer, (b) the contractor has a capable manager on site, (b) proper construction practices are being followed, (c) the design is being followed, and (d) quantities of work is measured accurately;
- (iv) Provide support and training to project office engineers, WUA and other stakeholders in the technical aspects of the Rajapur Irrigation System planning and design;
- (v) Assist RIMO in construction monitoring and ensure quality control, check and verify the final contractors' payment certificate with inspection of completed structures.
- (vi) Develop training materials to be used in the quality control training of RIMO personnel, and provide training on best construction practices.

- (vii) Assist RIMO engineers and WUAs/WUCs to jointly identify operation and maintenance requirements for the post-construction period.
- (viii) Prepare on farm water management and integrated crop and water management plan and support the implementation of programs for on-farm water management including strengthening of WUA, improved management operation and maintenance, on-farm irrigation management.
- (ix) Prepare detail canal operation plan and asset management plan Rajapur irrigation systems.
- (x) Conduct Survey works of approach channel in RIP
- (xi) The consultant will report to DTL
- (xii) Any other necessary works to meet the objective of the consulting service.

2. Rajapur Agriculture Specialist

36 The Rajapur Agriculture Specialists will have the key role to support the implementation of the institutions and agriculture development programs in the Rajapur Irrigation Project. The specialist will have a master's degree in agriculture or an equivalent related field and will have 12 years of general experience and have a specific experience of 7 years relating to agriculture development and strengthening the rural institutions including WUA and agriculture cooperatives is important. Must be fluent in written and spoken English and an ability to draft concise reports; good communication skills; excellent computer skills, working experience in MIS is essential. The consultant's responsibilities will include but are not limited to the following.

- (i) Provide the key support for the agriculture and institution programs for the Rajapur Irrigation System.
- (ii) Work closely with RIMO and Agriculture Office to implement the program of training and institutional development including the irrigation and agriculture units at the local level.
- (iii) Provide key support to RIMO and Agriculture Office for the program of strengthening of the field level management including strengthening of the WUAs as well as establishing WUCs in selected areas.
- (iv) Provide key support for the implementation of the agricultural development plans in the irrigation area; the specialist will work closely with the RIMO and Agriculture Office including the program of agriculture training and demonstrations, provision of support subsidies to promote agriculture enterprises;
- (v) Guide planning and implementation of ADP for crop diversification and commercialization with effective marketing support towards maximizing on-farm income;
- (vi) Assist in collecting information for M&E of the agricultural activities at ISP level and suggest further improvement as necessary;
- (vii) Establish the arrangements using MIS systems for monitoring and evaluation of the various institution and agriculture programs;
- (viii) Work in close coordination with design engineer to prepare canal operation plan , asset management plan of Rajapur Irrigation System.
- (ix) Support Central Agriculture Specialist in preparation of procedure guidelines of WUCs formation in selected irrigation schemes.
- (x) The consultant will report to Central Agriculture specialist.
- (xi) Any other necessary works to meet the objective of the consulting service.

3. Rajapur Social Development Specialist

37 The Rajapur Social Development Specialists will be responsible to ensure that the social safeguards, social mobilization and social interventions in sub-project are planned and implemented as per the project's requirements. The specialist will be based in the RIMO and will make frequent trips to provide guidance and supervision to the project and provide support to the Social Mobilisers assigned to Rajapur. The Social Development Specialist will have a master's degree in social sciences or related fields; have 12 years of general experience and 7 years specific experience in participatory community development, knowledge of social inclusion issues in the sector and experience in undertaking GESI trainings at different levels; experience in promoting women's advancement and gender equality; knowledge in the area of rural development; excellent computer skills and excellent communication and interpersonal skills. The specialist will have experience in computerized M&E systems and comprehensive knowledge of data management. Also have and be proficient in written and spoken English with an ability to prepare clear and concise reports. The consultant's responsibilities will include but are not limited to the following;

- (i) Work in close collaboration with the project implementation team to assess the needs and requirements for social interventions during the implementation period and provide necessary support to plan and implement the social development activities including social mobilization.
- (ii) Take the lead on gender and social inclusion, social safeguards, consultation and ensuring adequate stakeholder participation in the sub-project.
- (iii) To be primarily accountable for the implementation and reporting of GESI plan, voluntary land donation, due diligence framework and the Indigenous Peoples planning to the Project Director and Team Leader on a quarterly basis.
- (iv) Carry out capacity development training and provide support to all project staff in GESI mainstreaming as a resource person;
- (v) Review the existing ISF collection and utilization plan of the WUA and prepare a comprehensive strategy for fixing, collecting and utilizing ISF for ensuring sustainable O & M plan. Prepare institutional development plan for RIP project.
- (vi) Assess the quality and completeness of disaggregated data being gathered to assess project benefits and impacts for project;
- (vii) Facilitate the flow of information into the MIS at the project level and the structure of data to be collected disaggregated by sex, caste and ethnicity that provides information on the indicators established in the design and monitoring framework (DMF)
- (viii) Prepare a comprehensive GRC guideline for RIMO and support in forming GRCs and mechanism for grievance redress policy as per the guideline;
- (ix) Analyze socio-economic data of all monitoring reports, as well as undertake quarterly specialized GESI monitoring.
- (x) Prepare annual in-depth project M&E report discussing impacts from gender, ethnicity and poverty reduction perspectives, utilizing qualitative instruments and case studies. The reports will include feedback from project beneficiaries and highlight successes and lessons learned.
- (xi) Coordinate with the Environment, Social Safeguard and Climate Change Branch of DWRI in the implementation of the Consultation, Participation, and Communication Plan and GESI Plan.
- (xii) The consultant will report to Central Social Development specialist.
- (xiii) Any other necessary works to meet the objective of the consulting service.

D. Province Offices

38 There will be 3 project offices (Koshi, Madesh, and Bagmati). The project office consultants will be based in each province office but will be required to work very closely with the PIUs and in the sub-project sites.

1. Provincial Irrigation/ Quality Control Engineers

39 The provincial irrigation/quality control engineers will be responsible for support and quality control of the construction of the FMIS schemes. The engineer will have a Master degree in civil/ water resources/ irrigation engineering or related field and have 12 years in general experience and 7 years specific experience in the design and supervision of construction works in irrigation projects. The engineers will be based in province offices but will make frequent visits to the sub-project sites. The consultant's responsibilities will include but are not limited to the following;

- (i) Work closely with the WRIDDs to support the construction supervision and contract management;
- (ii) Supervise the construction activities ensuring that (a) effective supervision of works by WRIDD supervisor/ engineer, (b) the contractor has a capable manager on site, (b) proper construction practices are being followed, (c) the design is being followed, and (d) quantities of work is measured accurately;
- (iii) Assist WRIDDs in construction monitoring and quality control, check and verify the contractors' final payment certificate with inspection of completed structures,
- (iv) Provide training to the WUA and the Sub-project Monitoring Committee (SMC), monitor their activities and follow up on any complaints received;
- (v) Develop training materials to be used in the quality control training of WRIDD personnel, and provide training on best construction practices;
- (vi) Assist WRIDD engineers and WUAs to jointly identify maintenance requirements after the post-construction period;
- (vii) Ensure the environmental management plans (EMP) are implemented according to the contractual requirements;
- (viii) Prepare on-farm water management plan and support the implementation of the programs including strengthening of WUA, improved management operation and maintenance, Integrated Crop and Water Management and the Pilot Community Conjunctive Groundwater at selected FMIS sites.
- (ix) Monitor the bidding and construction stages of each subproject and track in the MIS;
- (x) Prepare construction related reports as required by project management.
- (xi) The consultant will report to DTL.
- (xii) Any other necessary works to meet the objective of the consulting service.

2. Provincial Agriculture Specialist

40 The Provincial Agriculture Specialists will have the key role to support the implementation of the institutions and agriculture development programs in the Hill and Terai FMIS sub-projects. The specialist will have a master's degree in agriculture or an equivalent related field and will have 12 years of general experience and 7 years of specific experience relating to agriculture development. Experience in strengthening the rural institutions including WUA and agriculture cooperatives is important. Must be fluent in written and spoken English and an ability to draft concise reports; good communication skills; excellent computer skills, working experience with computer-based MIS and work planning systems is essential. The consultant's responsibilities will include but are not limited to the following.

- (i) Provide key support for the agriculture and institutional development programs for the hill and terai FMIS sub-projects.
- (ii) Work closely with the WRIDDs and AKCs to implement the program of training and institutional development of the devolved institutions including the irrigation and agriculture units at the local level;
- (iii) Provide key support to the WRIDDs and AKCs for the program of strengthening of the field level management including strengthening of WUAs as well as establishing a WUCs in selected sub-projects;
- (iv) Provide key support for the implementation of the agricultural development plans in the FMIS sub-projects; the specialist will work closely with the WRIDDs and AKCs including the program of agriculture training and demonstrations, provision of support subsidies to promote agriculture enterprises;
- (v) Guide planning and implementation of ADP for crop diversification and commercialization with effective marketing support towards maximizing on-farm income;
- (vi) Assist in collecting information for M&E of the agricultural activities at ISP level and suggest further improvement as necessary;
- (vii) Establish the arrangements of using MIS systems for monitoring and evaluation of the various institution and agriculture programs
- (viii) Support central Agriculture specialist in preparation of procedure guidelines of WUCs formation in selected irrigation schemes.
- (ix) The consultant will report to Central Agriculture specialist and DTL.
- (x) Any other necessary works to meet the objective of the consulting service.

3. Provincial Social Development Specialist

41 The Provincial Social Development Specialists will be responsible to ensure that the social safeguards, social mobilization and social interventions in each sub-project are planned and implemented as per the project's requirements. The specialist will be based in the province offices and will make frequent trips to provide guidance and supervision to the subprojects and provide support to the Junior Technicians/Social Mobilisers in each sub-project. The Social Development Specialist will have a master's degree in social sciences or related fields; 12 years of general experience and 7 years of specific experience in participatory community development, knowledge of social inclusion issues in the sector and experience in undertaking GESI trainings at different levels; experience in promoting women's advancement and gender equality; knowledge in the area of rural development; excellent computer skills and excellent communication and interpersonal skills. The specialist will have experience in M&E systems and comprehensive knowledge of data management. Also have and be proficient in written and spoken English with an ability to prepare clear and concise reports. The consultant's responsibilities will include but are not limited to the following;

- (i) Work in close collaboration with the project implementation team for each FMIS sub-project to assess the needs and requirements for social interventions during the implementation period and provide necessary support to plan and implement the social development activities including social mobilization;
- (ii) Take the lead on gender and social inclusion, social safeguards, consultation and ensuring adequate stakeholder participation in each sub-project;
- (iii) To be primarily accountable for the implementation and reporting of GESI plan, Resettlement Plan, Indigenous People development Plan to the Project Director and Team Leader on a quarterly basis.

- (iv) Carry out capacity development training and provide support to all project staff in GESI mainstreaming;
- (v) Review the existing ISF collection and utilization plan of the WUA and prepare a comprehensive strategy for fixing, collecting and utilizing ISF for ensuring sustainable O & M plan. Prepare institutional development plan for FMIS sub-project.
- (vi) Collect and assess the quality and completeness of disaggregated data to assess project benefits and impacts for each sub-project;
- (vii) Review the project's MIS system for socio-economic data collection and ensure system updates to support M&E of social aspects;
- (viii) Prepare annual in-depth project M&E report discussing impacts from gender, ethnicity and poverty reduction perspectives, utilizing qualitative instruments and case studies. The reports will include feedback from project beneficiaries and highlight successes and lessons learned;
- (ix) Prepare Communication and consultation plan for the project and coordinate with the Environment, Social Safeguard and Climate Change Branch of DWRI in the implementation of the Consultation, Participation, and Communication Plan and GESI Plan.
- (x) Assist WRIDD/AKC in overall management, implementation, monitoring, and reporting of social safeguards compliance.
- (xi) Ensure that information on safeguard planning and implementation is updated and submitted to CPMO with the support of WRIDD and the contractor.
- (xii) Hold consultations with beneficiary farmers, update IR-DDR (if required), and submit it to CPMO for review and approval.
- (xiii) Be responsible for the day-to-day implementation and monitoring of IPP.
- (xiv) Conduct continuous public consultations and information disclosure with the support of social mobilizers.
- (xv) Ensure timely submission of monthly and quarterly progress reports, as well as semi-annual social monitoring reports to CPMO, with the support of WRIDDs.
- (xvi) Prepare a comprehensive GRC guideline for FMIS and support in forming GRCs and mechanism for grievance redress policy as per the guideline at the subproject and SMC level, ensuring it is fully functional prior to or during the award of the first contract, or within three months of loan effectiveness, whichever is earlier. Address any grievances brought about through the grievance redress mechanism in a timely manner as per the RF.
- (xvii) Identify any non-compliances and assist in preparing time-bound corrective action plans, if and when required.
- (xviii) Maintain and update a subproject-wise database of grievance-related issues and report to CPMO for timely actions.
- (xix) Support WRIDDs/AKC/WUA in all awareness, training, and capacity-building activities related to social safeguards and GESI-AP implementation as a resource person.
- (xx) The consultant will report to Central Social development specialist and DTL.
- (xxi) Any other necessary works to meet the objective of the consulting service.

E. Non- key Experts (Support Consultants)

42 The non-key experts will provide the support to the project experts. The non-key experts are sub-professional positions and the consultant must submit a pool CVs of the different categories non-key with the technical proposals. Their CVs will be checked to ensure they meet the minimum qualifications, but they will not be evaluated.

43 Support consultant (SCs) is a pool of well qualified but less experienced consultants to provide support to the various project activities when and as required. The SCs will play a key support role to the CPMO, CAMO and PIUs Offices. Proposed SCs will be Electrical Engineer, Engineer for on-farm water management and design and construction, MIS management, Financial Management, monitoring and information systems, GIS/ AutoCAD officer. The SCs will work under the direction of the PD, TL, DTL and the relevant key consultants. The SCs inputs will depend on the requirements, and they will be expected to travel between the various project locations as and when required. The SCs will have minimum Bachelor level in a relevant subject and should have at least 2 years' relevant experience. Computer literacy will be important, the actual requirements will be determined during the project implementation and different qualification and skills and maybe required, estimated inputs are as below:

- (i) Electrical Engineer: (1 position-2 pm); to support for the design and supervision of the installation of electrical works under the project including electrification of the intake gates at Rajapur, electrification of the hill lift systems, pilot electrification of tubewells. Should have qualification in electrical engineering or other relevant subject.
- (ii) Engineer I (On-farm water management): (1 position-44 pm); to support for on-farm water management works in Rajapur Irrigation System, FMIS and HLIP. Should have qualification in Civil/Agriculture engineering or relevant subject.
- (iii) Engineer-II (Design and construction): (1 positions- 44 pm). To provide support to planning design and support for the supervision of the infrastructure programs. Should have qualifications in civil engineering or other relevant subject.
- (iv) MIS Management Support: (1 position-44 pm); to provide management support for MIS, MIS based field monitoring, information technology. Should have qualifications in Information Technology or relevant subject.
- (v) Financial Management Support: (1 position- 22 pm): Assist in disbursement and financial management, support PMU account officer in accounting, manage monthly SOEs from PIUs, prepare withdrawal application and maintain disbursement records. Should have qualifications in Management/Accountancy or relevant subject.
- (vi) Environmental Safeguard Monitors: (1 positions-44 pm each) to support CMPO in undertaking the safeguards monitoring and reporting activities from the project components level to comply with the GoN and ADB environmental safeguard requirements, overall environmental safeguards management, quality assurance and reporting ensuring compliance with the environmental management plan (EMP) requirements. Should have qualification in environmental science or relevant subject.
- (vii) GIS/AutoCAD Officer: (1 positions- 22 pm). To provide support to planning/ design Engineer in preparation of GIS maps and Engineering drawings. Should have qualifications in engineering or other relevant subject.

Table 2: Indicative Provisional sums

Items	Descriptions
Training, Seminars, Workshops	For Routine trainings like Procurement, SPPR and MIS, workshops like Annual progress, Financial Management, Guideline of WUCs, HL Manual etc. by the PIMS or CPMO to all project staffs, beneficiaries and stakeholders.
Office Equipment, machinery and furniture	Procurement of equipment like computers, photocopy machine, printers, power inverter etc. for all Central and Provincial level PIMS office and Furniture and Furnishing for establishment of their central and field offices.
Updating SPPR Software	The existing SPPR software is about 10 years old and need updates for SPPR preparation of sub-projects of Batch 2 and 3.
Survey	Survey and specific studies including topo-survey works of approach channel in Rajapur Irrigation System