KINGDOM OF CAMBODIA
NATION RELIGION KING

LAND ALLOCATION FOR SOCIAL AND ECONOMIC DEVELOPMENT PROJECT III (LASED III)
IDA Credit No. 6706-KH

TERMS OF REFERENCE

FOR CONSULTING FIRM

To Conduct Technical Scoping Study, Detail Engineering Design and Construction Supervision of Small-Scale Irrigation Schemes (MAFF-CS 20)

Institution:	Ministry of Agriculture, Forestry and Fisheries (MAFF)
Reporting line:	Agriculture Director, LASED III
Hiring/Procurement type:	Consulting Firm
Method of Procurement:	Quality and Cost-Based Selection
Closing Date:	30 May, 2024
Expected Contract Start:	31 October, 2024

I. LASED III project description.

1. The Land Allocation for Social and Economic Development Project III (LASED III) is based on three legal frameworks, each defining an operational framework for implementation. First, the legal framework for granting Social Land Concessions (SLCs) was established in 2003 by adopting the Land Law and the sub-decree No. 19, which defines the criteria and procedures for establishing an SLC. For Indigenous Communal Land Titling (ICLT), the legal framework was developed through sub-decree 83, which outlines the communal land title registration procedure. In addition, Commune Land Use Planning (CLUP) was established through sub-decree 72 on commune land use planning.

2. The LASED III project which obtained funding support from the World Bank, aims at addressing the priority needs of current and prospective project beneficiaries. It will expand and deepen the support to the Royal Government of Cambodia's (RGC) Commune Social Land Concession (SLC) program, building on the implementation experience of the LASED and LASED II projects, and good practices in the sector. In order to make the lands provided to project beneficiaries productive and sustainable, the project will provide infrastructure facilities, including the establishment of small-scale irrigation distribution networks from already existing wells or intakes at 7 existing LASED II SLC sites and to include around 12 new SLCs which are to be identified, and will promote the adoption of improved agricultural technologies. In addition, the project will provide technical assistance to 15 IP communities seeking to implement ICLTs, and development assistance including infrastructure and livelihoods activities to other 30 IP communities that have already acquired their communal land titles. LASED III's estimated cost is US$107 million supported by a World Bank Credit of US$ 93 million and a contribution from the RGC of US$14 million. The project will be implemented over a period of six years.

3. The PDO is to provide access to land tenure security, agricultural and social services, and selected infrastructure to small farmers and communities in the project areas. There are three PDO level indicators that will be measured through the following indicators: (i) tenure security provided to beneficiary farmers and community groups, to be measured by the number of registered land titles and by the size of related area covered (ha). Data would be disaggregated by gender, individual, and communal land rights; (ii) Infrastructure and service provision in the project areas to be measured by the access to agriculture services, clean water, connecting roads, schools and health posts; and (iii) Sustainable, agriculture-based livelihood development for individuals and groups in the project communities to be measured by improvements in the poverty status of

beneficiaries. Citizen engagement is measured through the satisfaction of beneficiaries with the land titling process and the provision of agriculture services.

4. LASED III project has five components as follows:

- **Component 1: Selection and Development Planning of Social Land Concession and Indigenous Communal Land Titling.** This component would support for: (a) participatory preparation of SLC and ICLT plans for the new sites/communities. Where appropriate, the land use plans would include specific NRM protection and climate smart/climate change resilience considerations; (b) identification, prioritization and planning of appropriate instruments and infrastructure investments including collection of appropriate project baseline data; and (c) processing of individual SLC land titles for eligible land recipients and of indigenous communal land titles in IP communities.
- **Component 2: Community Infrastructure Development.** This component will finance at selected SLC sites and ICLT communities, implementation of productive/economic and social community infrastructure investments. These include agricultural (rural) school buildings, teachers' houses, health posts and community centers. Based on the experiences in existing SLC areas and responding to the significant infrastructure gaps at the proposed new project sites, appropriate transport connectivity would be provided through site access roads, residential and agriculture access roads and tracks, both within and across the SLC sites.
- **Component 3: Agriculture and Livelihood Development.** This component would support the settlement process of beneficiary households, the building of socio-economic capital (producer groups/cooperatives) and the development of climate smart and market demand driven agricultural production systems. These activities would include support for: (i) settling-in assistance to newly installed land recipients and land preparation assistance for a first cover crop and/or planting of seedlings for tree crops such as cashew to provide the basis for land recipients to establish a new residency and start using their new agriculture land.
- **Component 4: Project Management, Coordination and Monitoring and Evaluation.** This component would ensure effective project management. It will finance (a) the operational costs pertaining to multi-sector coordination, technical and fiduciary (procurement and financial management) activities, as well as social and environmental risk management of the Project Coordination Team (PCT) and Project Implementation Teams (PITs), both at the central and decentralized levels; (b) institutional and technical capacity building for project implementation at all levels; (c) M&E and information systems; (d) baseline, midterm, and final project evaluations and impact assessments; and (e) communications strategy and project results dissemination. Strong M&E systems for project implementation will be a top priority as will be strengthening the PCT's capacity to plan and execute them.
- **Component 5: Contingent Emergency Response.** The contingent emergency response component, with a provisional zero allocation, would allow for the reallocation of financing to provide immediate response to an eligible crisis or emergency.

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5. The World Bank's Environmental and Social Framework (ESF) applies to LASED III, including the following Environmental and Social Standards (ESSs):

ESS1: Assessment and Management of Environmental and Social Risks and Impacts;
ESS2: Labour and Working Conditions;
ESS3: Resource Efficiency and Pollution Prevention and Management;
ESS4: Community Health and Safety;
ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement;
ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources;
ESS7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities;
ESS8: Cultural Heritage; and
ESS10: Stakeholder Engagement and Information Disclosure

6. Key documents to address environmental and social (E&S) risks include an Environmental and Social Management Framework (ESMF), Indigenous Peoples Planning Framework (IPPF), Resettlement Policy Framework (RPF) and Environmental and Social Commitment Plan (ESCP). The IPPF and ESCP require that an environmental and social assessment (ESA) is undertaken before the implementation of the ICLT activities of the project building on the assessment of risks and impacts undertaken during preparation of the project and the E&S documents.

7. The Institutional arrangements for implementation will follow the current Government's institutional set-up. The Ministry of Land Management, Urban Planning and Construction (MLMUPC) is the executing agency (EA), and the Ministry of Agriculture, Forestry and Fisheries (MAFF) is the implementing agency (IA) tasked to implement the agriculture-related livelihood activities. The Project Director (PD) at MLMUPC will oversee implementation of respective project components and activities and will be supported by three Section Directors – Operations Director and Technical Director at MLMUPC and Agriculture Director at MAFF for day-to-day management of activities, and the monitoring of progress. The PD will be responsible for (a) overall guidance and policy advice; (b) internal coordination and resolution of project matters with counterparts in other departments within MLMUPC and MAFF and other government agencies; (c) donor alignment and harmonization; (d) reporting on project progress to the Project Steering Committee; and (e) public disclosure and civil society involvement. The three Section Directors will work full-time for the project and support the PD in the day-to-day management and monitoring of project activities. The EA and IA have been established respectively "project implementation teams" staffed with adequate in-house expertise, supplemented by consultants. The EA and the IA are responsible for their respective project activities of each component, including technical supervision, execution, contracting and direction of all consultants and firms, and will carry out procurement activities at national level for their respective activities. Project Implementation Manual (PIM). The government has prepared and adopted the PIM. The PIM describes all relevant stakeholders' processes, roles, and responsibilities.

MAFF-PCT: The Project Coordination Team (PCT), chaired by the Project Agriculture Director, will oversee and coordinate day-to-day planning and implementation of project activities. Programming of implementation of project activities will be guided by the results of the site-specific assessments, which will set out priority needs and sequencing of project activities on the ground. The consulting firm will work under supervision and management of the PCT to ensure its implementation success and effectiveness.

II. Scope of services

8. The TOR specifies the scopes of work, qualifications, and deliverables for the scoping studies, detailed engineering designs and construction supervision of civil works in SLCs of Component 2 of LASED III. The firm will comply with the World Bank's Environmental and Social Framework (ESF) Policy.

9. The scopes of this assignment will cover a total of 12 sub-projects located in 12 SLCs (Batch I-6SLCs and Batch II-6SLCs) in Kampong Chhnang, Steung Treng, Banteay Meanchey, Oddar Meanchey, Kampong Thom, Kratie, Rattankiri, Mondulkiri and Battambang provinces. The detailed geographical locations with indicative maps of the sites provided shown in Annex 1.

10. The Consulting Firm's services outlined in the following sections are to be carried out in close cooperation with the MAFF-PCT. While an attempt has been made to provide detailed tasks, it should be noted that this list is not exhaustive. The Firm is responsible for critically reviewing and adjusting the scope of services based on their professional judgment and knowledge. The expectation is for the Consulting Firm to undertake and complete all necessary work items to meet the Project's objectives.

11. The purpose of this TOR is to provide background information of the Project, to define the scope of work, the services and results to be rendered by the Consulting Firm as well as the format and manner in which the reports should be prepared. To achieve the main objective of the assignment, specific tasks are defined in the following scope of works.

III. Scope of works

Task 1: Conduct technical scoping and prioritizing of water resource and irrigation Systems for selected SLC sites

12. This task involves review of the priority investment plans for water resource and irrigation development, field visits and initial investigations, beneficiary communities and stakeholder consultation, technical assessment (water source/water resource, agronomic analysis and extension services), and environmental and social risk screening, and initial cost estimates.

13. The scoping and prioritization of potential irrigation systems will follow the set of agreed selection criteria below:

- **Technical:** Surface/ground water either gravity or pumping irrigation system; sufficient and reliable water resources from natural storage, reservoir or diversion weir; main irrigation system, and well water with high groundwater table; preferably located in the complementary potential irrigated agriculture.
- **Environmental:** Not located in environmentally sensitive areas (e.g. environmental reserves) and proposed water and irrigation systems will not lead to irreversible impacts.
- **Social:** Beneficiary communities under LASED III where the proposed water and irrigation system development and modernization will promote inclusive development and not lead to social conflicts; no major resettlement and/or land acquisition involved; and
- **Institutional:** Feasible to form up a farmer water user group (FWUG) in the beneficiary communities that are willing to organize themselves into FWUGs and take part in O&M of the off-farm system.

14. The result of the scoping study is expected to provide recommendation for water and irrigation system options. The options will be presented to the MAFF-PCT for final decision and to be selected for DED as described in the task 2.

Task 2: Detailed engineering design and tender documents

15. The main tasks of this work is to carry out the detailed design work for all selected sub-projects comprise of, but are not necessarily limited to the following items:

- Conduct technical investigations, topographical, and hydrological surveys if required;
- Identify borrow pits available in the volumes and quality sufficient at construction sites
- Carry out hydraulic and structural design of head works, reservoir, its appurtenant structures, water and irrigation schemes;
- Carry out design of the irrigation scheme (pipeline/canals systems whereas technically appropriate);
- Prepare detailed engineering layout map and drawings in appropriate scales;
- Prepare specification of the necessary materials and equipment
- Prepare detailed calculation of the overall costs, total calculation of the works (confidential cost estimate), separated in supply and construction works. Based on the findings, the Consulting Firm shall submit a detailed cost breakdown including contingencies and other general costs.

16. The Consulting Firm must prepare and submit the reports of each sub-project by including the following points:

- Location and layouts,
- Design structure drawings
- Designs structures,
- Standard construction details,
- Technical specifications,
- Bill of quantities, including a preamble,
- Cost estimate,
- Construction schedule, and

- Other necessary works will also be considered for inclusion.
- O&M manual for the irrigation scheme is necessary, and will cover but not limited to:
  (i) Short description of the system,
  (ii) Prepare O&M plans for each scheme,
  (iii) Prepare detailed procedures with technical and operational team composition for operation, maintenance and management of the system as the whole and each scheme;
  (iv) Prepare trainings manual for farmer water user groups

- Tender Documents for civil works contracts
  (i) The tender documents will be prepared to outline the tender packages and will be based on the DED.
  (ii) These documents should include explicit specifications that describe the work to be done, providing additional information beyond what is shown in the drawings. The specifications should encompass all technical requirements for the upcoming construction contracts.
  (iii) For each scheme, the Tender Documents for works, contractors shall contain at least the following sections:
    a. input for bidding document;
    b. invitation to tender;
    c. instruction to tenderers;
    d. general and specific conditions;
    e. form sheets;
    f. form of contract agreement;
    g. technical specifications;
    h. description of works, subdivided in specific lots;
    i. bill of quantities (BoQ) for each scheme and in total;
    j. maps and drawings;

17. The BoQ should contain detailed information about the quantities of work to be done. This is necessary for bidders to accurately estimate costs and for MAFF-PCT to evaluate the progress of the completed work. The BoQ should categorize items into various classes (such as civil works, mechanical and electrical equipment, materials, etc.) and further classify them into categories like earth works, concrete works, mechanicals, etc.

18. The Consulting Firm will be required to:
- Assist MAFF-PCT with site visits and clarification meetings during the tender process. The Consulting Firm will address any questions raised during these meetings through PCT and share the responses with all bidders.
- Support MAFF-PCT in providing assistance in all necessary preparations until the contracts are finalized and signed.

Task 3: Supervision of construction works

19. The consultancy services to be rendered shall include but not be limited to the sub-tasks specified below:
- Maintaining good communication with the Contractor;
- Issuing construction drawings to the contractor;
- Checking, verifying and recommending approval for the Contractor's work programme, suitability of contractor's staff and equipment, site safety and environmental protection, temporary land use plan (for areas such as site camps, borrow pits etc) and other arrangements necessary for compliance with contract conditions, before work commences;
- Providing the day-to-day presence of a construction supervisor while works are in progress;
- Quality control of materials, work methods and completed constructions in conformance with the technical specifications;
- Monitoring progress of the works against the contractor's workplan to ensure that works are completed on schedule;
- Ensuring compliance with site safety, environmental management, Land Acquisition Plan, Temporary Land Use Plan and other requirements of the contract;
- Verifying measurements made by the contractor;

- Reviewing contractor's payment requests;
- Preparing regular reports of physical and financial progress;
- Reviewing and recommending for approval contractor's claims for contingency costs, extension of time etc;
- Maintaining site records;
- Checking and verifying as-constructed drawings submitted by the Contractor;
- Following up on any issues arising during construction, and recommending appropriate actions to the MAFF-PCT;
- Maintaining good communication and liaison with stakeholders including local authorities and beneficiary representatives.

20. The Consulting Firm shall report regularly to MAFF-PCT. These reports will primarily serve to record the status of each contractual element of the project with regard to progress of all aspects of the project, identifying any impending problems with respect to project coordination, time over-runs or any situations potentially having cost implications.

21. At the end of the works and after provisional acceptance of the installations under the contracts, the Technical Supervisor shall send a preliminary completion report within a period of two months. This report shall take into account both technical and financial aspects.

22. At the end of the guarantee period and after final acceptance under the contracts, the preliminary completion report drawn up after the provisional acceptance of the works shall be updated to form the final completion report for the works.

IV. Logistic and timing

23. Project location. The Consulting Firm's services shall be performed in Phnom Penh and at the project location, according to the project actual needs.

24. Project duration. The Consulting Firm will implement this assignment from May 2024 to March 2026 through a standard lump sum contract format for the design portion of the assignment for Batch I and a standard time-based contract format for the design portion of the assignment for Batch II and the supervision of construction portion of the assignment for Batch I and II. The performance evaluation of selected firm will be conducted by MAFF-PCT.

V. Working Arrangements

25. The Consulting Firm/Team Leader of the firm will work under the supervision of the LASED III Agriculture Director and communicate regularly with MAFF-PCT. The Consulting Firm/Team Leader of the firm will work with stakeholders on agricultural activities in coordination with MLMUPC, MAFF, and sub-national level.

VI. Deliverables

26. The Consulting Firm will be responsible for carrying out the tasks as mentioned above. MAFF-PCT will provide coordination support in arranging meetings and consultations with both MAFF central and provincial departments. The Consulting Firm shall organize at least two workshops with the participations of MAFF's Project Team (Central and Provincial staff) that the Consulting Firm has to be responsible all related cost of the workshops: (i) inception workshop within one month of the project implementation and (ii) the final workshop to present the completion report.

VII. Reporting requirements

27. Reports shall be submitted to the MAFF-PCT as electronically files and with hard copies (One for original and three as copies) in English. Khmer translations of the completion report would be provided by the Consulting Firm within 14 working days after approval of the English version. All reports and drawings are subject to final approval and acceptance by MAFF-PCT. They include the followings:

- *Inception Report:* The draft Inception Report shall be prepared and submitted within a month after commencement of the Contract. The draft Inception Report will also provide an overview of issues identified during the inception period and highlight any possible changes or amendments to the workplan. The Consulting Firm will present the draft inception report to MAFF-PCT and finalized within 3 working days following MAFF-PCT's comments and recommendations.
- *Scoping Study Reports:* The Consulting Firm must prepare and submit draft scoping study reports of 12 SLCs before commencing detailed design. The report shall contain the following information; but not limited to:
    a. Water availability and source
    b. Agronomic analysis and extension services
    c. Environmental and social risk screening
- *Detailed Engineering Design Reports and Tender Documents:* The Consulting Firm must prepare and submit to MAFF-PCT as described in the task 2 for each sub-project:
    a. Detailed Design Report
    b. O &M manuals
    c. Tender documents
- *Progress Reports (Monthly Progress Report, Quarterly Report and Annual Report):* The Consulting Firm will submit the Monthly progress report about two days before the end of very calendar month, Quarterly progress report will be submitted about three days before the end of three calendar months and Annual Report will be submitted about one week before the end of the year calendar.

VIII. Provision of Payment.

28. Two proposals are being requested, a technical proposal addressing the tasks in this TOR and an associated financial proposal.

29. Given that the proposals are being requested from the identified Consultant on a Quality and Cost Basis of Selection, the contracts will be a standard lump sum contract format for the design portion of the assignment for Batch I and a standard time-based contract format for the design portion of the assignment for Batch II and the supervision of construction portion of the assignment for Batch I and II.

Deliverables and Payment Methods

No.	Deliverables	Payment conditions	Schedule
1	Inception Report	Proposal finalized and approved by the MAFF-PCT	Week 4 (1 month)
Batch I for 6SLCs			
2	Scoping study reports for 6 sub-projects	Scoping study reports submitted to and approved by MAFF-PCT	Week 12 (3 months)
3	Detailed Engineering Design reports and Tender documents for 6 sub-projects.	Detailed Engineering Design reports and Tender documents submitted to and approved by MAFF-PCT	Week 24 (6 months)

4	Construction Supervision/Monthly construction supervision reports and progress report when the construction 50% completed of each sub-project.	50% completed construction Approved by MAFF-PCT	Week 72 (18 months)
5	Construction Supervision/Monthly construction supervision reports and completion report when the construction 100% completed.	Finished100% completed Construction Approved by MAFF- PCT	Week 96 (24 months)
Batch II for 6SLCs			
6	Scoping study reports for 6 sub-projects	Scoping study reports submitted to and approved by MAFF-PCT	Week 28 (7 months)
7	Detailed Engineering Design reports and Tender documents for 6 sub-projects.	Detailed Engineering Design reports and Tender documents submitted to and approved by t MAFF-PCT	Week 40 (10 months)
8	Construction Supervision/Monthly construction supervision reports and progress report when the construction 50% completed of each sub-project.	50% completed construction Approved by MAFF-PCT	Week 72 (18 months)
9	Construction Supervision/Monthly construction supervision reports and completion report when the construction 100% completed.	Finished100% completed Construction Approved by MAFF- PCT	Week 96 (24 months)

IX. Key Personnel

30. The assignment will be carried out by a Consulting Firm composed of key and non- key experts as provided in below table. However, the Consulting Firm shall make their own estimates of resource required to complete this assignment.

No.	Position	No. of positions	Total input (p-m)	Comment
A	**Key Experts**			
1	Team Leader / Hydraulic & Hydrology Engineer	1	24	
2	Irrigation Design and Pumping Engineer	1	18	
3	Civil and Structural Engineer	1	24	
4	Agronomist	1	6	
5	Site Engineers	2	36	Inputs for 2 site Engineers
	Total A:	**6**	**108**	

B	**Non- Key Experts**			
1	CAD Operators	2	36	Input for 2 CAD operators
	Total B:	**2**	**36**	
	Consulting Service Total (A+B):	**8**	**144**	

X. Facilities. The Consulting firm is required to provide:

- Office accommodation for the key-experts, non-key experts and supportive staff;
- The furniture and office equipment (computers, printers, telephone, fax, photocopying equipment, binding machines, etc.);
- Office connection to utilities and well as security and
- Vehicles as may be needed to fulfill the consultancy contract; and

XI. The minimum qualifications requirement of the Consulting Firm for this assignment

31. **Criteria of Consultant Firm.** The short listing will be on information demonstrating that the Consulting Firm have the required qualifications and experience to perform the services. The short listing criteria are:

a. At least ten (10) years demonstrated experience in water resources science, hydraulic engineering (including design construction and management of irrigation system such as headwork, irrigation canals, pumping system etc.), and meteo-hydrology or a related field.
b. Completion of five (5) successful implementation support and/or supervision of similar projects.
c. At least ten (10) years of experience in implementing similar projects. Team composition should include but not limited to hydraulic and hydrology engineer (team leader), hydrology/water resource engineers, geologist/geotechnical engineer, electrical or mechanical engineer, civil engineer, O&M specialist and agriculture economist specialist.
d. Experience in water management plan and strategy for agriculture in poor rural households and Indigenous Community areas.

32. **Preferred additional qualifications.** The selected firm is preferred to have the following qualifications:

a. Experience with excellence coordination and resource management
b. Previous experience working with externally financed project, preferably WB, ADB, UN agencies, or INGO/NGOs supported projects.

XII. Minimum Requirement Criteria, Qualification, Skills and reporting of the National Consultant

33. The Consulting Firm shall provide qualified experts to carry out the services. Their choice should take into account the need to recognize and build up local capacities in small scale irrigation on scoping study, and detail design and construction supervision. It is envisaged that the key professional staff will be required to provide varying degrees of input for the assignment. The construction supervision inputs required for this assignment shall be organized taking into consideration of the design schedule and excluding the time required for the procurement process for contractor selection (estimated from 6 to 14 months).
Key Experts' qualifications:

(1). Team Leader / Hydraulic & Hydrology Engineer

Minimum Qualification Requirements:

- At least master's degree in water resources/irrigation and civil engineering or related field and preferably.
- At least 10 (ten) years of experiences in design, implementation and management of irrigations systems and other types of infrastructure facility.

- Must have experience in leading the team on design of irrigation systems and other types of infrastructure facility preferably two projects funded by international development in Cambodia, or other development partners.
- Must have demonstrated ability to lead teams and create a strong working relationship with the executing agencies.
- Excellent communication (written and oral) skills and strong interpersonal skills will be considered an asset.
- Professional in English, reading, listening, writing and speaking

Job Responsibilities

- Have overall responsibility for leading the team by providing technical advices and supports during the design and implementation phases, including preparation of work plans;
- Supervise study and analysis for incorporating climate change adaptation measures in the project scope and design of subprojects;
- Maintain liaison with MAFF-PCT, including advising on key decisions relating to sub-project selection as the assignment moves forward;
- Provide guidance to the team in completing scoping studies and detailed engineering design of sub-projects, preparing bill of quantities and drawings and ensuring that the work meets the required standards;
- Conduct field visits with the team at regular and appropriate times during the study;
- Assist MAFF-PCT with the updating as necessary and implementing use of its manuals and guidelines for project planning, implementation and procurement and ensuring these are all in line with project and SOP guidelines on these subjects;
- Ensure reports are delivered to required quality and schedule and submit regular reports and consolidation report to meet the project's M&E requirements;
- Supervise the work of the construction supervision team;
- Review and approve the construction drawings of the contractor and permit the contractors to carry out construction work;
- Perform other tasks assign by Project Management Team/ Agriculture Director.

(2). Irrigation Design and Pumping Engineer

Minimum Qualification Requirements:

- At least Bachelor's degree in water resources/irrigation or related field;
- At least 5 (five) years of experiences in the scoping study, detailed design, mapping, topographic surveys, cost estimates, drawings, bill of quantities (BoQ) and pumping station construction/operation;
- Must be highly proficient in MS Excel, knowledge and experience in using AutoCAD is preferable;
- Preferable experience working with Government Implementing Agencies/ Ministries, international NGO, public sector institutions and/or funding agencies;
- Professional in English, reading, listening, writing and speaking.

Job Responsibilities

- Work closely with the engineer team under the management of Team Leader;
- Provide guidance in carrying out topographic surveys;
- Conduct a desk study of available hydrological data and relevant reports on water resources in the project target areas;
- Conduct analysis of rainfall, stream flow, surface water runoff and river morphology at the sub-project locations;
- Prepare the scoping studies of sub-projects focusing on the hydrological characteristics, irrigation water availability against other water uses, validity of command areas, and estimated costs;
- Prepare detail design for the subprojects focusing on the hydrological characteristics and climate change adaptation, hydraulic design of structures, geological characteristics of soil for embankment and estimated costs;

- Provide technical assistance to construction supervision;
- Perform other tasks assigned by the Team Leader, Project Management Team/ Agriculture Director.

(3). Civil and Structural Engineer

Minimum Qualification Requirements:

- At least Bachelor Degree in civil engineering or related field;
- At least 5 (five) years of experience in design of hydraulic structures including small dams, weirs, irrigation systems, analysis structure and design of super structure and/ foundation design, other infrastructures facilities and overall structural design standard, cost estimation, preparation of BoQs;
- Must have experience of successfully using various methods of studies in different situations;
- Must be highly proficient in MS Excel, knowledge and experience in using AutoCAD and other programs in the preparation of designs and drawings is preferable;
- Preferable experience working with Government Implementing Agencies/ Ministries, international NGO, public sector institutions and/or funding agencies;
- Professional in English, reading, listening, writing and speaking.

Job Responsibilities

- Work with the design team closely in the selection of subprojects;
- Analysis of structure and design for hydraulic structures;
- Provide support to the irrigation design engineer for structural designs and cost estimates of subprojects;
- Complete detailed engineering design of subprojects and estimate costs, and prepare bill of quantities, drawings, and tender documents of subprojects;
- Supervise all activities of civil works on sites and ensure that quality of works is constructed according to contract, technical specificities of works and technical drawings;
- Monitor physical and financial progress against the milestones for timely completion of the contractors to carry out the construction effectively and efficiently and to the highest standards of quality;
- Manage and maintain accurate field notes such as; request for inspection, notice for construction and prepare report progress of work;
- Prepare a list of defects with an indication of how to correct and the date of expected completion, to be signed by the contractors and the Team Leader;
- Document and complete the necessary testing per regulatory and contractual requirements and specifications;
- Prepare Interim Payment Certificates based on measured quantities of works;
- Perform other tasks assigned by the Team Leader, Project Management Team/ Agriculture Director.

(4). Agronomist,

Minimum Qualification Requirements:

- At least Bachelor Degree in agronomy or related;
- At least 5 (five) years of experiences in agricultural development, in extension service;
- Must have experience of successfully using various methods of studies in different situations;
- Must be highly proficient in MS Office, knowledge and experience in crop water requirements, designing cropping patterns and cropping intensities;
- Preferable experience working with Government Implementing Agencies/ Ministries, international NGO, public sector institutions and/or funding agencies
- Professional in English, reading, listening, writing and speaking

Job Responsibilities

- Develop agricultural cropping/cultivation plan;
- Provide adequate agricultural extension services in target areas;

- Assist preparing sub-project profiles and review the scoping studies of sub-projects, focusing on soil condition for agriculture, current and planned cropping patterns and other agricultural practices, expected outputs and benefits, and environmental impacts of prevailing farming practice;
- Perform other tasks assign by Team Leader, Project Management Team/ Agriculture Director.

(5). Site Engineers

Minimum Qualification Requirements:

- At least Bachelor Degree in civil engineering or related field;
- At least 5 (five) years of experience in site inspection;
- Must be highly proficient in MS Excel, knowledge and experience in using AutoCAD and other programs in the preparation of designs and drawings is preferable;
- Preferable experience working with Government Implementing Agencies/ Ministries, international NGO, public sector institutions and/or funding agencies;
- Professional in English, reading, listening, writing and speaking.

Job Responsibilities

- Inspect all operations on the site, ensuring safe practices and good workmanship;
- Maintain a detailed record of daily activities on the site including available resources, weather conditions, work stoppages and the reasons therefore, etc.
- Prepare measurements for works completed and in progress;
- Check the construction schedule submitted by contractor,
- Monitor the progress of physical and financial activities regularly against the milestones and ensure the tasks are completed on time;
- Assist MAFF-PCT in resolving contractual issues and overall contract management; and ensure quality of construction as per design specifications.
- Perform other tasks assign by Team Leader, Project Management Team/ Agriculture Director.

Non- Key experts
(1). CAD Operators

Minimum Qualification Requirements:

- At least Bachelor Degree in water resources/irrigation and civil engineering or related field;
- At least 3 (three) years of experience in Computer aided design (CAD) including irrigation systems, drip irrigation and other infrastructure projects;
- Preferable experience working with Government Implementing Agencies/ Ministries, international NGO, public sector institutions and/or funding agencies;
- Professional in English, reading, listening, writing and speaking

Job Responsibilities

- Create accurate CAD drawings from hand sketches, verbal instructions, and site visits;
- Think creatively and critically to support the project team in the design process, to create sketches and drawings that work;
- Maintain and continually updating the sub-project drawings lists;
- Create, edit, and update standard details for use in projects.
- Assist in preparing bill of quantities (BoQ) including a preamble, and cost estimates.
- Perform other tasks assigned by the Team Leader, Project Management Team/ Agriculture Director.

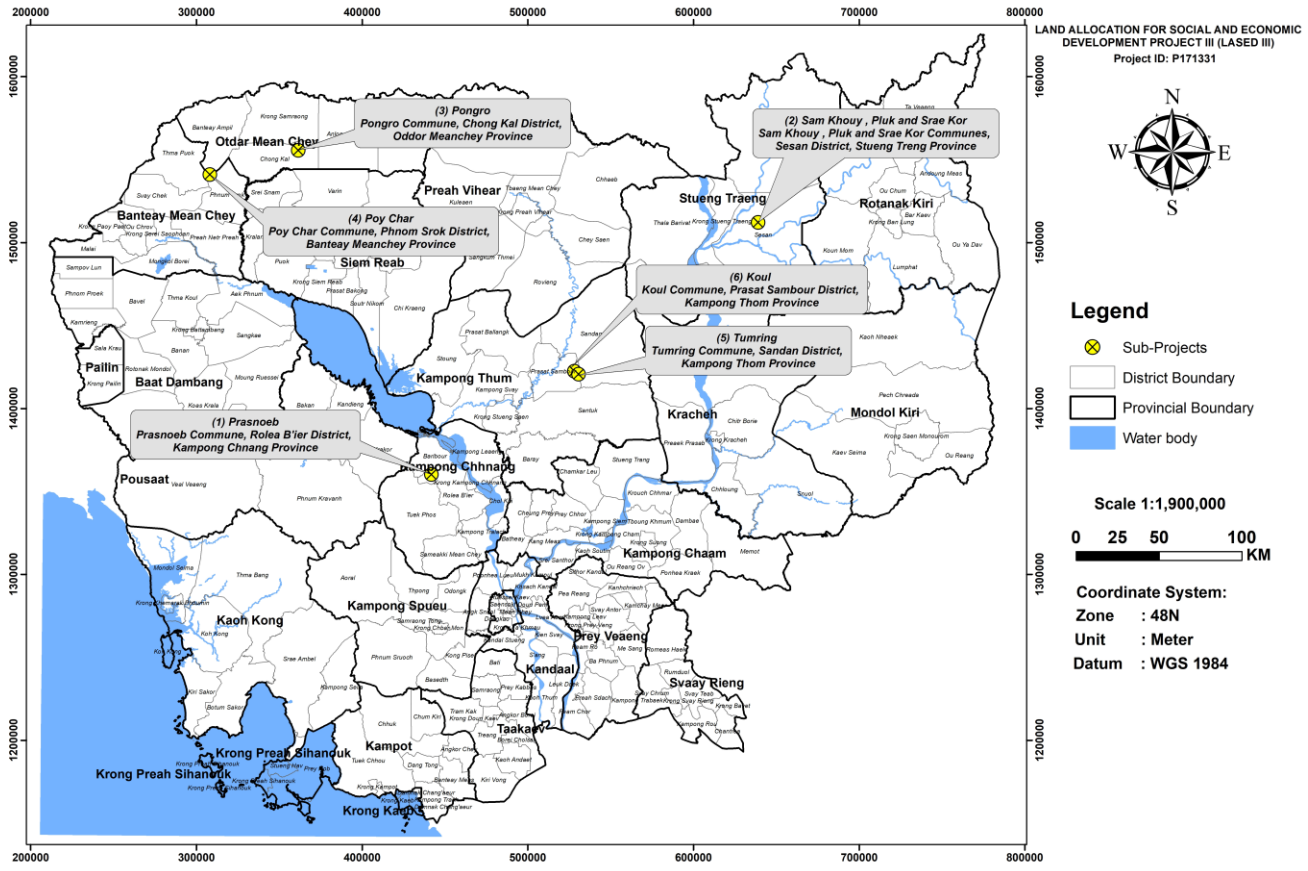
ANNEX 1: The Detailed Geographical Locations and Indicative Maps

Batch I-6SLCs

List of Social Land Concessions (Batch I-6 SLCs)						
No	**Provinces**	**Districts**	**Communes**	**Villages**	**X (Easting)**	**Y (Northing)**
1	Kampong Chhnang	Rolea B'ier	Prosneob	Prey Sompov	441,905.11	136,0218.11
				Chon Leav		
				Sa Ong		
				Sro Ngam Te		
				Tropang Ompel		
				Prosneob		
				Chor		
2	Stueng Treng	Sesan	Sam Khouy	Sam Khouy	639,110.18	1,512,148.7
				Badeum		
				Hangsavat		
				Sre Tapan		
			Pluk	Pluk		
				Bangbung		
			Srae Kor	Sre Kor1		
				Sre Kor2		
3	Oddor Meanchey	Chong Kal	Pongro	Pongro	361,575.82	1,555,607.92
				Ompel		
				Ta Pen		
				Kandal Dom		
				Bonteay Chorr		
				Sras Keo		
				Kouk Songke		
				Prey Nokor		
4	Banteay Meanchey	Phnom Srok	Poy Char	Som Bour	308,207.73	154,1078.95
				Pong Ro		
				Tropang Thmor Cherng		
				Poy Ta Ong		
				Tropang Thmor Kandal		
				Tropang Thmor Tboung		
				Poy Snoul		
				Poy Char		
				Kon Kleng		
				Chork Preah On Doung		
				Tropang Peas		

5		Sandan	Tumring	Leng Ror Neam Ron Tas Tom Or Kbal Domrie Somrong Srolao Sroung Khous	530,736.63	1,420,685.86
6	Kampong Thom	Prasat Sambour	Koul	Kampong Chvea Ou Ta Seav Chom Res Bak Srey Toul Char Toul Tnoung Bachor La Knhov Chher Teal Chroum Kampong Louk Toul Pongro	528,236.31	1,422,485.03

Map Showing the Locations of 6 Sub-Projects in 6 SLCs for Batch I



Batch II-6SLCs

List of Social Land Concessions (Batch II-6 SLCs)						
No	**Provinces**	**Districts**	**Communes**	**Villages**	**X (Easting)**	**Y (Northing)**
1	Kratie	Ou Krieng Sen Chey	Kbal Damrei	Chong Horb Ou Por Ou Ta Neng Sre Sbov Sre Treng	623,011.69	1,415,192.66
2	Rattanakiri	Kon Mum	Trapang Kraham	Phumi 1 Phumi 2 Phumi 3	672648.95	1,511,718.14
3	Kampong Thom	Prasat Balang	Phan Nheum	Tropang Knong Sro Mor Pdeak Prey Mry Kro Nhoung Pro Hot Smonh Sou Chus	479,394.74	1,446,545.84
4	Mondulkiri	Koh Nhek	Royor	Royor Me Mom Rorvak Kdoy	700,426.95	1,443,280.22
5	Battambang	Samlot	Kampong Lapov	Svay Chroum Kampong Lapov Kandal Ou Derm Chek Prey Thom Steung Toch Ou Chom Leu Ou Chom Kandal Ou Chom Krom	270,559.53	1,389,528.02
6		Khos Krolar	Chhnal Morn	Krang Svat Bonteay Chma Prey Sen Prey Tor Teung Som Rong Rerssey Preah Chhnal Morn	308,855.69	140,1652.53

Map Showing the Locations of 6 Sub-Projects in 6 SLCs for Batch II