

Project Administration Manual

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Proposed Grant for Additional Financing Lao
People's Democratic Republic: Northern Rural
Infrastructure Development Sector Project

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Project Administration Manual Purpose and Process

The project administration manual (PAM) describes the essential administrative and management requirements to implement the project on time, within budget, and in accordance with the Government and the Asian Development Bank (ADB) policies and procedures. The PAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the PAM.

The Ministry of Agriculture and Forestry (MAF) and the provincial agriculture and forestry offices (PAFO) are wholly responsible for the implementation of ADB financed projects, as agreed jointly between the borrower and ADB, and in accordance with the Government and ADB's policies and procedures. ADB staff is responsible to support implementation including compliance by MAF and PAFO of their obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.

At the additional financing negotiations the borrower and ADB shall agree to the PAM and ensure consistency with the grant agreement. Such agreement shall be reflected in the minutes of the additional financing negotiations. In the event of any discrepancy or contradiction between the PAM and the Grant Agreement, the provisions of the Grant Agreement shall prevail.

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

Abbreviations

ADB	–	Asian Development Bank
ADF	–	Asian Development Fund
AF	–	additional financing
CQS	–	consultant qualification selection
DCO	–	district coordination office
DOLA	–	department of land administration
DONRE	–	district office of natural resources and environment
EGDF	–	ethnic groups development framework
EGDP	–	ethnic groups development plan
EMP	–	environmental management plan
FBS	–	fixed budget selection
GAP	–	gender action plan
GIC	–	grant implementation consultant
IA	–	implementing agencies
NCB	–	national competitive bidding
NGOs	–	nongovernment organizations
NSC	–	national steering committee
PAM	–	project administration manual
PONRE	–	provincial department of natural resources and environment
PPO	–	provincial project office
PSC	–	provincial steering committee
SPS	–	Safeguard Policy Statement
WUG	–	water user group

I. PROJECT DESCRIPTION

A. Project Rationale, Location and Beneficiaries

1. The ongoing Northern Rural Infrastructure Development Sector Project (current project) is enhancing rural inhabitants' access to and participation in the market economy to improve their livelihoods and enhance food security. It supports increased production in those commodities having a comparative advantage within markets that are increasingly accessible to investments by ADB and other development partners in Greater Mekong Subregional (GMS) transport corridors and economic integration. The highly seasonal nature and uncertainty of rainfall (with the increasing impact from climate change) constrains agriculture yields and limits production options. Irrigated agriculture holds the key for removing the risk associated with rain-fed agriculture, enhancing productivity and providing options for other potentially more profitable crops (such as dry season vegetables and melons).

2. Strong positive impacts are already emerging in the current project as demonstrated in the socio-economic impact studies carried out on three completed productive rural infrastructure (PRI) subprojects. The PRI subprojects consist of improving irrigation schemes as well as access within and around the schemes. This has increased the areas under cultivation for both rainy and dry seasons, with significant diversity of cropping especially during the dry season. Water user groups (WUG) are providing the backbone for sustainability through organized operation and maintenance (O&M) and are also evolving into producer groups able to negotiate production contracts with traders, and hence more commercially oriented agricultural practices. These developments have underpinned significant impacts including economic internal rates of return (EIRR) averaging 22% and an increase in average annual household income of \$1,320.¹

3. The current project is performing well as recorded in all project progress reports,² and as measured by ADB's five performance indicators. Moreover, review missions have determined that (i) the technical quality of construction of PRI is good, (ii) the executing agency has the expertise needed to effectively implement ADB financed projects, and (iii) significant benefits in excess of those originally predicted are already accruing.³

4. As of 31 January 2017, project implementation progress was around 99.6% against the elapsed grant period of just over 91.4%.⁴ Cumulative contract awards and disbursements were \$20.54 million (89%) and \$20.84 million (91%), respectively. The implementation of 26 PRI subprojects represents the bulk of the current project investment, and all of which have been completed by June 2016.

5. Moreover, the current project continues to be compliant with all grant covenants and safeguard requirements. The annual project financial statements and the annual audit reports

¹ Project report - Socio-economic Impact Studies of: (i) Nam Dai Irrigation Subproject in Sing District, Luang-Namtha Province; (ii) Nam Haad Right Bank Irrigation Subproject in Pha Oudom District, Bokeo Province; and (iii) Nam Lan Irrigation Subproject in Boun-Tai District, Phongsali Province; all dated September 2015, and available in supplementary documents number 22, 23 and 24.

² The aide memoire for current project's midterm review in April 2014, first recorded the request for additional financing.

³ The current project was ranked first in good project implementation practice in 2014 through the annual recognition award by the Lao PDR Ministry of Planning and Investment and ADB's Lao Resident Mission.

⁴ The current project meets the criteria for well performing projects as per ADB Operations Manual, H5/OP Additional Financing, Section B, para 3.

have been completed satisfactorily, within the due dates, and without any issues. Safeguard measures have been consistently and satisfactorily implemented.

6. The additional financing will be used to scale up the current project's outputs.⁵ The overall project (refers to the current project with additional financing): (i) will remain technically feasible, economically viable, and financially sound; (ii) is accorded high priority by the government; (iii) is consistent with the project's development objectives, and (iv) is consistent with the current country partnership strategy (CPS). The overall project will continue to use a sector modality which has proven to be efficient and effective for organizing implementation.

7. The overall project will be carried out in the same four project provinces of Bokeo, Louang-Namtha, Oudomxai, and Phongsali. Table 1 presents the geographic location of the overall project.

Table 1: Project Location

Provinces	Bokeo	Luang Namtha	Oudomxai	Phongsali
Current project districts	Houayxai Paktha Pha Oudom	Sing Louang-Namtha Long	Beng ^a	Nhot Ou Boun-Tai
New districts added under additional financing			Houn	Boun-Nua
Total number of districts	3	3	2	3

^a In Beng district, only non-infrastructure activities have been carried out under the current project.

Source: ADB

B. Impact and Outcome

8. The impact of the overall project will be improved rural household incomes in the four northern provinces of Bokeo, Louang-Namtha, Oudomxai, and Phongsali. This remains unchanged from the current project and is aligned with the Ministry of Agriculture and Forestry's (MAF) Agricultural Development Strategy to 2025 and Vision to the year 2030. The outcome will be increased agricultural productivity in the four northern provinces of Bokeo, Louang-Namtha, Oudomxai, and Phongsali, which also remains unchanged. The geographic coverage will extend to Houn district in Oudomxai province, and Boun-Nua district in Phongsali province.

C. Outputs

9. The four main outputs included in the current project remain valid for the overall project, which are described below:

10. **Output 1: Production and Productivity Enhancing Rural Infrastructure Constructed and/or Rehabilitated.** This output will include the rehabilitation and/or construction of PRI, consisting of small to medium-scale gravity-fed irrigation systems and the rehabilitation and/or upgrading of rural access roads. Under the overall project, investment in PRI development will be expanded to Oudomxai province. Support for rural access roads under the overall project will consist of improvements to rural access in and around the irrigation schemes.

⁵ The project meets the criteria for scaling up well-performing projects as per ADB Operations Manual, H5/BP Additional Financing, Section C, para 29.

11. Twenty-six PRI subprojects have been implemented within the current project and another 22 PRI subprojects will be financed by the additional financing (AF), for a total of 48 PRI subprojects that will be implemented under the overall project. Feasibility studies (FS) have already been carried out for two representative PRI subprojects (RSP) during AF project preparation. Consultation and participation to enhance the local ownership is essential for long term sustainability of the schemes and shall be strongly implemented.

12. In the overall project, PRI subprojects will be strengthened for better climate resilience by the following measures:

- (i) Watershed stabilization. In many cases the upstream watersheds are deteriorating leading to both heavy but short water flow or early drying up of the streams. The watersheds need to be stabilized so that stream flow can be extended as long as possible into the dry season and to preserve and protect aquatic ecosystems. The overall project will engage an international and national bioengineer to design measures to stabilize environs near the infrastructure and at critical areas in the upstream watersheds. The measures will be included in the PRI subproject works packages to be carried out by the construction contractors. Please see output 2 for other actions to be taken.
- (ii) Weir Design. In terms of diversion weir design, close attention will be paid to achieving: proper depths and lengths of cutoff walls, wing walls, stilling basin elevations and dimensions, and stronger headwalls. Moreover, upstream and downstream bank design and erosion protection, including properly placed riprap where necessary, will be included in the design. Furthermore, integrated into the weir design will be measures to enable aquatic life migration up and downstream.
- (iii) Emergency failure mechanisms. The construction of emergency spillways that allow controlled failure to occur, to protect the main structures during extreme flows, will be included in the PRI subproject design as appropriate.

13. **Output 2: Productivity and Impact Enhancing Initiatives Adopted.** Initiatives to enhance the impact and sustainability of investments in PRI will continue. The activities will be identified in a participatory and gender-sensitive manner from a menu of options developed with the respective stakeholders and beneficiaries including:

- (i) Strengthening technical extension services to PRI subproject beneficiaries, especially WUGs;
- (ii) Establishment of farmer producer groups to coordinate supplies of agricultural produce to markets and/or processors;
- (iii) Support for contracted agricultural production with price incentives based on quality; and
- (iv) Initiatives to secure tenure and access to land for sedentary agricultural production and land re-zoning to protect the health of watersheds above rehabilitated irrigation schemes, among others.
 - a. The overall project will carry out a dissemination program so that the watershed, irrigation block and cadastral maps prepared under the project are disseminated to the key stakeholders at the levels of: farmer/WUG; district, province and the Department of Land Use Planning and

Development within the Ministry of Natural Resources and Environment's (MONRE).

- b. The maps will be used as a basis for designing soil and water conservation measures. These measures will include extensive use of bio-engineering to stabilize the environs around the irrigation structures and at critical areas of the stream.
- c. The overall project will intensify efforts so that all farmers within all of the irrigation subproject command areas are able to upgrade their land title from "user" to "owner". The overall project will engage in the grant implementation consultants (GIC) package a land titling coordinator to support this objective.⁶ It will support provincial mobile land titling teams, including representatives from the provincial and district offices of Natural Resources and Environment (PONRE/DONRE) who will work through the provincial project office (PPO) and district coordination office (DCO) structures.

14. Capacity building will be an integral requirement of all activities to ensure that women and vulnerable ethnic groups have the necessary skills to fully participate and benefit from these activities.

15. **Output 3: Capacities of National, Provincial and District Agencies Strengthened to Enable a Sector Development Approach.** Under the current project, this output is addressing capacity building at the national level (within MAF) as well as the implementation capacity for staff at NPMO, the PPOs and the DCOs. Capacity building efforts will continue under the AF principally at the district level, but will also address requirements of PPO in Oudomxai as a new recipient of PRI investment under the overall project. There are two updates to this output in the overall project:

- (i) The preparation of an irrigation subsector review (ISR), to provide MAF, ADB and other stakeholders, with a clear view and framework for future investment.
- (ii) The current project activity to strengthen the monitoring and evaluation section within the Department of Planning and Cooperation (DOPC) will not be continued in the overall project. Instead it will be carried out under the ADB financed L3198-Northern Smallholder Livestock Commercialization Project.⁷

16. **Output 4: Project managed and subprojects delivered efficiently and effectively.** Under AF, NPMO will continue to manage the overall project with the assistance of the PPOs within the provincial agriculture and forestry offices (PAFO) in the participating provinces. The AF will continue to provide adequate resource for operation and administration, as well as consulting services for implementation support and technical expertise, needed to implement PRI subprojects and overall project management.

⁶ The project implementation consultants were previously named as grant implementation consultant. Going forward all reference will be "project implementation consultants" for consistency

⁷ ADB. 2014. *State approval details*.

II. IMPLEMENTATION PLANS

A. Project Readiness Activities

	Key Project Preparation Elements	Stage of Project Preparation					
		Appraisal/fact-finding (March 2016)	Negotiations (November 2016)	Approval (May 2017)	Effectiveness (June 2017)	First Disbursement (within 3 months after effectiveness) July 2017	Status as of 5 April 2017
1.	Project is within Government development priority	Confirmed					Confirmed
2.	Project administration manual, project implementation manual, or project operational manual	Discussed and drafted	Completed and agreed				Discussed and drafted
3.	Discussion and agreement with Government on application of taxes and duties	Discussed and drafted	Completed and agreed				Discussion ongoing
4.	Environment impact assessment, social impact assessment, land acquisition & resettlement plan and ethnic groups development plan	Discussed and agreed	Government budget confirmed				Completed Safeguard documents approved on 5 May 2016
5.	Procurement capacity assessment	Completed	Confirmed				Completed
6.	Financial management capacity assessment	Completed	Confirmed				Completed
7.	Procurement plan for the first 18 months	Drafted	Confirmed	Advance actions initiated	Initial contracts signed		Drafted as part of PAM

	Key Project Preparation Elements	Stage of Project Preparation					
		Appraisal/fact-finding (March 2016)	Negotiations (November 2016)	Approval (May 2017)	Effectiveness (June 2017)	First Disbursement (within 3 months after effectiveness) July 2017	Status as of 5 April 2017
8.	Auditing arrangements including TOR	Discussed and agreed	Confirmed				Completed
9.	Monitoring and evaluation arrangements	Indicators in DMF and monitoring mechanism discussed & agreed	Key results indicators with baseline data and monitoring mechanism confirmed			Survey started to validate baseline data	Discussed and agreed
10.	Required staff have been appointed to support project preparation and suitable project offices identified	Project organization chart, job descriptions, staffing and responsibilities discussed and drafted	Project organization chart confirmed, all key staff identified and appointed. assigned	Key staff on-board			Discussed and agreed
11.	Recruitment of project implementation consultants	TOR of extension of services to current grant implementation consultant (GIC) discussed and drafted	Draft contract variation confirmed		Contract variation signed and GIC mobilized		Discussed and drafted
12.	Advance Action – detailed design of two sample PRI subprojects, together with bidding documents		Contracts awarded and work commenced for engineering design.				Contracts awarded

	Key Project Preparation Elements	Stage of Project Preparation					
		Appraisal/fact-finding (March 2016)	Negotiations (November 2016)	Approval (May 2017)	Effectiveness (June 2017)	First Disbursement (within 3 months after effectiveness) July 2017	Status as of 5 April 2017
13.	Government counterpart funds and in-kind support	Discussed & agreed	Confirmed	Request for first year funds submitted to the Government		First year fund allocated	Discussed and agreed
14.	Legal opinion		Draft legal opinion submitted to ADB 15 days after negotiation	Final legal opinion submitted to ADB 15 days after signing of grant agreement			Not yet due
15.	Opening of imprest/ designated account				Imprest account opened		Not yet due

ADB = Asian Development Bank, DMF = design and monitoring framework, t, GIC = grant implementation consultant, PRI = productive rural infrastructure, TOR = terms of reference.

B. Project Implementation Plan

[illegible]

[illegible]

C. Technical Considerations

1. Project Technical Framework

17. The overall project will improve critical productive rural assets focusing on irrigation and rural access infrastructure. These assets have been identified and prioritized by the end-users and the relevant sector authorities through the provincial development planning process. The specific subprojects have been pre-screened for prima facie technical, financial and economic feasibility. General considerations for the detailed design of the assets include:

- (i) Affordably;
- (ii) Meeting the specific needs of the end-users;
- (iii) Minimizing whole life cycle costs;
- (iv) Optimizing the inputs of local resources including: labor; materials; enterprises; and, knowledge;
- (v) Being within the realistic envelope of the existing maintenance capacities. The assets will be demonstrated not to impose additional maintenance burdens that will be impossible to meet; and,
- (vi) Performing the intended purpose for the entire duration of their design life.

18. At the outset, the project will establish a detailed quality assurance framework. The framework will consist of separate yet connected quality control and quality assessment activities that will ensure the entire production cycle yields assets that are fit for their intended purpose. Particular attention will be paid to quality control during the construction process to ensure adherence to design specifications.

2. Irrigation Subprojects

19. The sustainability of irrigation improvements will depend upon two key factors: sound engineering and effective WUG management. The irrigation infrastructure designs will:

- (i) Incorporate the experience gained from the ADB socio-economic studies of completed irrigation projects (2016); and
- (ii) Be consistent with international good practice such as that described by the technical publications of United Nations Food and Agriculture Organization.

20. The designs of the irrigation systems will take place in an environment with three key uncertainties in relation to estimating stream flow, including:

- (i) Changing land use patterns in the upper watershed areas;
- (ii) Limited rainfall and stream flow hydraulic information; and
- (iii) Climate change altering traditional climate and rainfall patterns and consequently stream flow characteristics.

21. Engineering design will need to address this uncertain environment. Special measures will need to be considered such as:

- (i) Increasing the structural strength of the weirs against overturning and slippage;

- (ii) Lengthening the side and bottom cutoffs against erosion and piping;
- (iii) Optimizing the weir crest and stilling basin design;
- (iv) Increasing the overall weir size;
- (v) Providing additional emergency outlet facilities to pass flood flows; and,
- (vi) Upstream and downstream erosion protection using gabions and bio-engineering.

22. The successful operation and maintenance of the irrigation systems will be directly dependent upon the effectiveness of the WUG management. The WUGs shall operate according to the following principles:

- (i) Establish membership and corresponding rights within the WUGs. Generally the members of WUGs are all irrigation scheme beneficiaries who own land or share crop in the command area of the scheme;
- (ii) Establish the management structure of the WUG and the division of responsibilities between the irrigation beneficiaries and the sector authorities. A WUG chief should be elected by secret vote held on an annual basis by the members. Other support management positions will be decided according to the local needs and conditions;
- (iii) The WUG chief is the executive responsible for: coordination between the members and the sector authorities; defined activities for maintenance, rehabilitation and operation of the irrigation scheme; supervising and coordinating water allocation to individual farmers; and, settling disputes between the members;
- (iv) Establish equitable and transparent water distribution schedule and ensure that it is followed. A consensus approach should be taken to balance the objectives of efficiency, equity, and local customs and practices;
- (v) Establish transparent and equitable collection and management of water fees. Fees shall be assigned in direct proportion to benefit realized from the water use;
- (vi) Agree upon various initiatives to expand or alter the water distribution, such as the construction of additional tertiary canals; and,
- (vii) Resolve through consensus any issue or problem concerned with the operation and maintenance of the irrigation scheme.

3. Rural Access and Roads Subprojects

23. Rural access improvements will be prioritized to remove the most critical obstacles to access and mobility within the irrigation schemes and to and from the local village and, or, the nearest formal level of the transport network. The road improvements will follow existing alignments and focus on simple spot improvements and shaping of the road surface. Special attention will be focused on the design of sustainable road drainage (surface, side and cross) and the use of appropriate surfacing and paving options where needed.

24. Drainage design will consider the impact of climate change which may result in rainfall and surface water movement that differs from traditional experience. To counter these effects cross drainage structures will be increased in size and structures such as vented and unvented causeways will be constructed. Side drains will be concrete lined where necessary due to steep gradients. The input of the knowledge from the local population in the drainage design is critical.

25. Road surfacing and pavement design will be based upon the measured strength of the existing subgrade and longitudinal gradient in comparison with current and projected traffic loading. Where paving is needed the design will consider a variety of sub-base, base and surfacing options. The road pavements will be design for a minimum duration of eight years use before periodic maintenance is required.

26. The maintenance will be the responsibility of the WUGs. The WUGs will be responsible for carrying out routine maintenance including drainage, embankment shape and other related tasks. Wherever possible, structures will be constructed to restrict traffic loading to legal limits.

III. PROJECT MANAGEMENT ARRANGEMENTS

A. Project Implementation Organizations – Roles and Responsibilities

27. The Ministry of Finance (MOF) is the borrower's representative accountable for all funds received for the implementation of the overall project. The Ministry of Agriculture and Forestry (MAF) is the executing agency (EA) for the overall project, which will fulfill its mandate through its Department of Planning and Cooperation (DOPC). DOPC established a national project management office (NPMO) for the current project. The NPMO mandate will be extended to cover the overall project. Specifically, it will be responsible for project coordination and management, including financial management of project accounts, procurement of goods and works, recruitment of consultants, compliance with safeguard requirements, and monitoring and reporting.

28. To ensure inter-agency cooperation at the national level, the national steering committee (NSC) established for the current project will continue its function through the overall project. NSC will continue to be chaired by a Vice Minister of MAF and will include representation from MOF, Ministry of Planning and Investment (MPI), Ministry of Industry and Commerce (MOIC), Ministry of Public Works and Transport (MPWT), Ministry of Foreign Affairs (MOFA), Ministry of Natural Resources and Environment (MONRE), Lao Women's Union (LWU), the Committee for the Advancement of Women's Affairs and the provincial vice governors from the participating provinces. NSC will meet annually, or as required, to review overall implementation progress, approve annual work-plans and budgets, and provide overall policy guidance. The NPMO will provide secretariat services to NSC.

29. In the participating provinces, the implementing agencies will be the provincial agriculture and forestry offices (PAFOs). The provincial project offices (PPOs) established in each PAFO under the current project will continue to function under the overall project and will be responsible for financial management at provincial level, coordination and management of implementation of PRI subprojects and associated initiatives. An additional staff will be assigned to PPO from PONRE to oversee land use planning and registration. The PPOs will also coordinate and supervise the work of the DCOs.

30. The provincial steering committees (PSCs) established in each participating province under the current project will continue to function to ensure inter-agency coordination at the provincial level. Each PSC is chaired by a provincial vice governor with provincial representation reflecting that for NSC, but will also include governors from the participating districts. PSC will meet annually or as required to review implementation progress; ensure adequate levels of coordination between key agencies; approve provincial work-plans and budgets; and approve PRI subprojects for financing under the overall project. PPOs will provide secretariat services to the PSCs.

31. To assist with the process of securing land tenure through land titling, provincial mobile land titling teams will be established within the PPO/DCO implementation structure and led by a provincial land use planning/land registration officer assigned from PONRE. In each district, the provincial coordinator will be assisted by two district land registration officers assigned from each respective DONRE. These teams will be supported by a land use planning and land titling officer within GIC/NPMO.

32. To assist in implementation at the district level, a DCO will be established within the two new district agriculture and forestry offices (DAFO) participating in the overall project. DCOs will implement PRI subproject activities at district level. In particular, with support from PPO and GIC/NPMO, they will be responsible for the identification of associated initiatives during PRI subproject feasibility; community development activities; coordination of resettlement activities; environment management activities; indigenous people development activities; gender activities; land registration and titling; and monitoring and reporting on physical progress of implementation. The structures and staffing of each level are presented below.

Table 2: Management Roles and Responsibilities

Project Implementation Organizations	Management Roles and Responsibilities
Borrower	
Ministry of Finance (MOF)	<ul style="list-style-type: none"> ➤ In addition to established responsibilities in the current project, the MOF will establish an additional imprest account for the additional financing at the Bank of Lao for disbursement of eligible expenditures under the grant. MOF will be responsible for managing, replenishing, and liquidating the account; and ➤ Be fully accountable and responsible for the proper use of advances to the imprest account including advances to the sub-accounts.
Executing Agency	
Ministry of Agriculture and Forestry (MAF)	MAF will continue to be responsible for management of the overall project, and coordinate through the Department of Planning and Cooperation (DOPC).
National Project Management Office (NPMO)	<p>DOPC will maintain its NPMO for the overall project, which will continue to be responsible for the day to day implementation of project activities at national level. Among others, the NPMO will be responsible for:</p> <ul style="list-style-type: none"> ➤ oversight coordination and management of the overall project; ➤ establishment and management of a sub-account for the grant; separate from the already established sub-account under the current project; ➤ negotiation of contract variation for GIC to continue to provide consulting services (to be referred to as GIC); ➤ recruitment of national consultants for preparation of detailed designs, bid documents, and contract administration and construction supervision; ➤ recruitment of safeguard monitoring entity;

Project Implementation Organizations	Management Roles and Responsibilities
Steering Committees	<ul style="list-style-type: none"> ➤ approval of detailed design of PRI subprojects; ➤ procurement of civil works contracts for PRI subproject construction; ➤ organization of training programs; ➤ procurement at national level of office equipment and vehicles; ➤ procurement of office refurbishment for PAFOs/DAFOs; and ➤ secretariat services to the NSC.
National Steering Committee (NSC)	<p>NSC established under the current project will continue its function through the overall project ensuring interagency cooperation at national level. NSC will continue to meet annually to:</p> <ul style="list-style-type: none"> ➤ review implementation progress; ➤ approve annual work plans and budgets; and ➤ provide oversight guidance on the implementation of the overall project.
Provincial Steering Committee (PSC)	<p>PSC, chaired by the provincial vice-governor, will continue to function in each participating province to ensure inter-agency coordination at the provincial level. PSC will meet annually to:</p> <ul style="list-style-type: none"> ➤ review implementation progress; ➤ approve provincial work plans and budgets; ➤ approve PRI subprojects; and ➤ provide oversight and guidance on subproject implementation.
Implementing Agencies	<p>PPOs have already been established in the PAFOs in the participating provinces under the Current project. They will continue to function and be responsible for day-to-day implementation and management of PRI subprojects including:</p> <ul style="list-style-type: none"> ➤ establishment and management of an additional sub-account for the Grant; ➤ coordination of PRI subproject activities at the provincial level; ➤ coordination of all safeguard activities; ➤ coordination of land use planning, registration and land titling; ➤ approval of PRI feasibility studies and PRI subproject investment reports (SIRs); ➤ liaison with the district coordination offices; and ➤ provide secretariat services to PSC.
Provincial Project Office (PPO)	
District Coordination Office (DCO)	<p>DCOs will be established within participating DAFOs. DCO will continue its implementation role at the district level, and will be responsible for:</p> <ul style="list-style-type: none"> ➤ all community development activities; ➤ all surveys; ➤ land registration and titling activities; ➤ all safeguard and gender activities; ➤ identification of associated initiatives; ➤ monitoring of implementation of PRI subprojects;

Project Implementation Organizations	Management Roles and Responsibilities
Financiers	and
Asian Development Bank (ADB)	<ul style="list-style-type: none"> ➤ reporting progress of implementation. <p>ADB is the principal financier and will:</p> <ul style="list-style-type: none"> ➤ provide additional financing for the overall project cost; ➤ monitor overall project implementation, disbursement, procurement, consultant selection, and reporting; ➤ monitor schedules of activities, including funds flow; ➤ review compliance with agreed procurement procedures; ➤ review compliance with financing covenants; ➤ monitor effectiveness of safeguard procedures; ➤ monitor conformity with ADB anti-corruption policies; ➤ undertake periodic review missions, including midterm review, jointly with the EA.

ADB = Asian Development Bank; DAFO=district agriculture and forestry office; DCO= department coordination office; DOPC= department of planning and cooperation; EA= executing agency; GIC= grant implementation consultant; MAF = Ministry of Agriculture and Forestry; MOF= Ministry of Finance; NPMO= national project management office; NSC= national steering committee; PAFO=provincial agriculture and forestry office; GIC= grant implementation consultant; PRI= productive rural infrastructure.

33. An overview of job descriptions for the NPMO, PPO and DCO based government staff is provided in Table 3.

Table 3: Key NPMO, PPO and DCO Staff Job Descriptions

Position	Job Description	Requirements
NPMO – Management		
National Project Director	The National Project Director (NPD) reports to the National Steering Committee (NSC) on the overall implementation of the overall project, and provides oversight and guidance to the National Project Manager (full-time).	A senior government official with at least 20 years' experience working multi-lateral banks in the sector.
National Project Manager	The National Project Manager (NPM) is engaged full-time to supervise the implementation of the overall project, and provide a reporting function back to the NPD and ADB on project developments, issues and progress.	A senior government official with at least 15 years' experience in the subsector, and with experience working with multi-lateral banks in the sector.
NPMO – Admin/Finance		
Deputy Manager (DPM)	The Deputy Project Manager reports to the NPM, ensuring effective coordination among project stakeholders on administrative and finance aspects. The main duties involve assisting the NPMO prepare and implement detailed annual work plans and budgets, coordinating all admin/finance/procurement, managing the overall project accounts to ensure timely disbursement for project activities, managing consultant recruitment and procurement, managing project fixed assets, and oversee implementation of the Project Performance Management System (PPMS). S/he reviews and endorses budget	A senior government official with at least 8 years' experience in the administration and finance on externally-funded projects. Tertiary qualified and competence in spoken and written English.

Position	Job Description	Requirements
	requests of PPOs and DCOs for onward submission for approval of the NPM.	
Chief Accountant	The NPMO-based Chief Accountant (CA) will report to the DPM (Admin), overseeing the day-to-day financial management of the project. The CA, supported by the financial management and procurement officers and consultants, will (i) facilitate the establishment of the necessary accounts at the NPMO/PPO level as required by ADB, (ii) establish the required accounting, withdrawal approval and audit systems and procedures, (iii) set up accounting software in line with project requirements, (iv) establish a system for safekeeping of tender documents, minutes of committee meetings, contracts and financial and audit reports; (v) prepare financial projections against the work plans, (vi) carry out a financial management training program for PPO staff; (vii) provide ongoing training and coaching to PPO's as needed, and (viii) supervise the preparation of regular financial reports for transmission to the EA and the ADB.	A senior government official with formal accounting qualifications and at least 8 years previous experience in financial management of internationally financed projects, preferably projects financed by ADB or World Bank. Tertiary qualified and competence in spoken and written English.
Assistant Accountant	The NPMO-based Assistant Accountant (AA) will report to the CA and will (i) assist with the establishment of the required accounting, withdrawal approval and audit systems and procedures; (ii) undertake day-to-day project financial accounting activities; (iii) monitor the flow of funds to the NPMO and PPOs; (iv) provide training and coaching to PPO's as needed; (v) monitor cash flow; (vi) ensure that accurate, up-to-date information regarding the project's finances is available to the CA and DPM upon demand; (vii) prepare regular financial reports for transmission to the EA and the ADB; and (viii) assist external auditors carry out the annual audit.	Formal accounting qualifications and at least 5 years previous experience as accountant on ADB or internationally financed projects. Ability to use accounting and word processing software. Tertiary qualified and good command of spoken and written English.
Disbursement Officer	The Disbursement Officer (DO) reports to the CA and will take care of the day to day administration of all withdrawal applications, associated reporting and monitoring of all disbursements, including any follow up with the Ministry of Finance.	At least 5 years' experience working with multi-lateral projects on the administration of withdrawals and disbursements. Good command of spoken and written English.
Procurement Officer	The NPMO-based Procurement Officer reports to the CA, ensuring all procurement activities are undertaken in accordance with ADB's Procurement Guidelines.	At least 5 years previous experience as procurement officer on ADB or internationally financed projects and good command of spoken and written English.
Administrative Assistant	The Administrative Assistant (AA) provides logistical support to the senior staff as needed. Frequently interacting with senior government officials, PPO/DCO staff and the consultants.	At least 3 years previous experience working on ADB or internationally financed projects. Ability to use word processing software and some English ability.
NPMO – Technical and Planning Staff		
Deputy	The Deputy Project Manager (DPM, technical and	A senior government

Position	Job Description	Requirements
Manager	planning) reports to the NPM, ensuring effective coordination among project stakeholders on all technical aspects. The main duties of the DPM involve coordinating and leading the preparation of the project work plan, coordinating with PPOs and DCOs on technical activities, managing technical consultants, overseeing implementation and monitoring of environmental, involuntary resettlement and indigenous peoples safeguards, the poverty reduction and social strategy, and gender action plans. The DPM supervises and endorses all technical activities for onward submission for approval of the NPM.	official with at least 10 years project management experience. Strong technical qualification in the irrigation subsector and competence in spoken and written English. The DPM will make frequent trips to the provinces to monitor project implementation.
Irrigation Engineer	The Irrigation Engineer (IE) reports to the DPM on all technical matters relating to irrigation for each subproject. The main duties of the IE include working and coordinating with the consultants and the irrigation engineers in the PPOs and DCOs on the feasibility studies, designs and construction of the subprojects. Prepares annual work plans, and provides progress and monitoring reports to the DPM.	At least 7 years of experience in the irrigation subsector, and at least 5 years of experience on externally-funded projects. Strong technical qualification in the irrigation subsector and competence in spoken and written English.
Rural Roads Engineer	The Rural Roads Engineer (RRE) reports to the DPM on all technical matters relating to rural roads for each subproject. The main duties of the RRE include working and coordinating with the consultants and the rural roads engineers in the PPOs on the feasibility studies, designs and construction of the subprojects. Contributes to annual work plans, and provides progress and monitoring reports to the DPM.	At least 7 years of experience in rural roads, and at least 5 years of experience on externally-funded projects. Tertiary qualified with competence in spoken and written English.
Land Use Planning/Land Titling Officer	The Land Use Planning/Land Registration Officer reports to the DPM on all matters relating to land use planning and land registration for each subproject. The main duties of the officer include working and coordinating with the project implementation consultants and the land use planning/land registration officers in the PPOs on the survey of command and catchment areas, consultation with local stakeholders, the preparation of land use and cadastral maps, and the adjudication process and issuance of title. Coordinate with the department of land administration and the provincial mobile land titling teams, and maintain a dialogue with the WUGs and landowners on land titling issues and to implement the provisions of the land use maps, and provide progress and monitoring reports to the DPM.	At least 7 years of experience in land use planning and mapping, and at least 5 years of experience on externally-funded projects. Tertiary qualified with competence in spoken and written English.
Agriculture Extension Officer	The Agriculture Extension Officer (AEO) reports to the DPM on all matters relating to the extension of agriculture extension for each subproject. The AEO will oversee and monitor the AEOs in the PPOs and DCOs in the extension of support activities to WUGs designed to enhance productivity. AEO will work closely with the project implementation consultants, and provide progress and monitoring reports to the DPM.	At least 7 years of experience in agriculture extension, and at least 5 years of experience on externally-funded projects. Tertiary qualified with competence in spoken and written English.
M&E Officer	The NPMO-based M&E Officer reports to the DPM on all matters relating to the Overall project's M&E system.	At least 3 years previous experience working as M&E officer on ADB or

Position	Job Description	Requirements
		internationally financed projects. Ability to use word processing software and good English ability.
Implementation Planning/Contract Management Officer	The Implementation/Planning/Contract Management Coordinator (IPCMC) reports to the DPM. Main duties of the IPCMC include assisting the DPM in coordinating with PPOs and DCOs in the planning for all activities under the umbrella of the Overall project, as well as provide an overall contract management function. Provides progress and monitoring reports to the DPM.	At least 5 years previous experience working on ADB or internationally financed projects. Tertiary qualified with good command of spoken and written English.
Community Development/Gender/Indigenous Peoples Officer	The Community Development/Gender/Ethnic Groups Officer (CDGEGO) reports to the DPM. S/he will be responsible for ensuring all PPOs and DCOs are aware of their responsibilities under the provisions of the grant agreement, provide/facilitate any necessary support and training, and provide progress and monitoring reports to the DPM.	At least 7 years of experience in safeguards, and at least 5 years of experience on externally-funded projects. Tertiary qualified with competence in spoken and written English.
Resettlement and Environment Officer	The NPMO-based Resettlement and Environment Officer reports to the DPM. S/he will be responsible for ensuring all PPOs and DCOs are aware of their responsibilities under the provisions of the grant agreement, provide/facilitate any necessary support and training, and provide progress and monitoring reports to the DPM.	A tertiary qualification in environment/social science and at least 5 years work experience in related field, preferably on internationally supported projects. Good command of spoken and written English.
PPO Management		
Provincial Project Director	The Provincial Project Director (PPD) reports to the Provincial Steering Committee (PSC) on the implementation of subprojects within his/her respective province, and provides oversight and guidance to the Provincial Project Coordinator (part-time).	A senior government official with at least 15 years' experience working with multi-lateral banks/donors in the sector. Good command of spoken and written English.
Provincial Project Coordinator	The Provincial Project Coordinator (PPC) reports to the PPD, ensuring effective implementation of subproject activities at the provincial level. Main duties include coordinating development of provincial work plan and budget, coordinating with related government agencies and development partners in the implementation of subprojects and capacity building activities, supervising and reviewing DCO's work plan and budget, following up and monitoring field implementation, and consolidating and reporting project benefit monitoring and evaluation.	A senior government official with at least 10 years' experience in the subsector, and with experience working with multi-lateral banks/donors in the sector. Tertiary qualified and with good command of written and spoken English.
PPO Finance and Administration		
Chief Accountant	The PPO-based Chief Accountant (CA) will report to the PPC, overseeing the day-to-day financial management of the subprojects within his/her respective province. The CA, supported by the financial management and procurement officers and consultants, will (i) arrange for the establishment of the necessary accounts at the PPO level as required by ADB, (ii) establish the required accounting,	A senior government official with formal accounting qualifications and at least 5 years previous experience in financial management of internationally financed

Position	Job Description	Requirements
	withdrawal approvals and audit systems and procedures at the PPO level, (iii) set up accounting software in line with project requirements, (iv) establish a system for safekeeping of tender documents, minutes of committee meetings, contracts and financial and audit reports; (v) prepare provincial financial projections against the work plans, (vi) carry out a financial management training program for PPO staff; (vii) provide ongoing training and coaching to PPO staff as needed, and (viii) supervise the preparation of regular financial reports for transmission to the NPMO.	projects, preferably projects financed by ADB or World Bank. Tertiary qualified and competence in spoken and written English.
Administrative Assistant	The PPO-based Administrative Assistant (AA) provides logistical support to the CA and other senior staff as needed. Frequently interacting with senior provincial government officials, PPO/DCO staff and the consultants. S/he will oversee the establishment and monitoring of the PPO's accounting systems and procedures, tracks the use of subproject funds, and ensures accurate, up-to-date financial accounting information is available to the CA and PPC, consolidate PPO and DCO expenses and process request for replenishment/liquidation of the PPO's sub-accounts.	At least 3 years previous experience working on ADB or internationally financed projects. Ability to use accounting and word processing software and some English ability.
Contracts Management Officer	The PPO-based Contracts Management Officer (CMO) reports to the CA and will ensure all procurement activities at the provincial level are undertaken in accordance with ADB's Procurement Guidelines. S/he will take care of the day to day administration of all contractual matters at the provincial level.	At least 5 years previous experience in the contract management of ADB or internationally financed projects and good command of spoken and written English.
PPO Implementation and Planning		
Irrigation Engineer	The Provincial Irrigation Engineer (PIE) reports to the PPC on all technical matters relating to irrigation for each subproject within his/her respective province. The main duties of the PIE include working and coordinating with the consultants and DCOs on the feasibility studies, designs and construction of the subprojects. Prepares annual work plans, and provides progress and monitoring reports to the PPC.	At least 5 years of experience in the irrigation subsector, and preferably some experience on externally-funded projects. Tertiary qualified in the irrigation subsector and competence in spoken and written English.
Rural Roads Engineer	The Provincial Rural Roads Engineer (PRRE) reports to the PPC on all technical matters relating to rural roads for each subproject within his/her respective province. The main duties of the PRRE include working and coordinating with the consultants and DCOs on the feasibility studies, designs and construction of the subprojects. Contributes to annual work plans, and provides progress and monitoring reports to the PPC.	At least five (5) years' experience in rural roads, and preferably some experience on externally-funded projects. Tertiary qualified with competence in spoken and written English.
Agriculture Extension Officer	The Provincial Agriculture Extension Officer (PAEO) reports to the PPC on all matters relating to the extension of agriculture extension for each subproject within his/her respective province. The PAEO will oversee and monitor the AEOs in the DCOs in the extension of support activities to WUGs designed to enhance productivity. PAEO will work closely with the project implementation consultants, and provide progress and monitoring reports to the PPC.	At least 5 years of experience in agriculture extension, and at least 5 years of experience on externally-funded projects. Tertiary qualified with competence in spoken and written English.

Position	Job Description	Requirements
Land Use Planning/Land Registration Officer	The PONRE assigned Provincial Land Use Planning/Land Registration Officer reports to the PPC on all matters relating to land use planning and land registration for each subproject in the province. The main duties of the officer include working and coordinating with the project implementation consultants on the survey of command and catchment areas, consultation with local stakeholders, and the preparation of land use and cadastral maps and the adjudication process and issuance of title. Together with the district land registration officers, establish a mobile land titling team and coordinate with the department of land administration, and maintain a dialogue with the WUGs and landowners on land titling issues. Work with WUGs to implement the provisions of the land use maps, and provide progress and monitoring reports to the PPC.	At least 5 years of experience in land use planning and mapping, and preferably some experience on externally-funded projects. Tertiary qualified with competence in spoken and written English.
M&E Officer	The Provincial M&E Officer (PMEO) reports to the PPC on all matters relating to the M&E of the subprojects in his/her respective province. S/he will coordinate with the NPMO-based M&E officer and the project implementation consultants in the routine collection of all provincial data for the PPMS.	At least 3 years previous experience working as M&E officer on ADB or internationally financed projects with competence in spoken and written English.
PPO Safeguards		
Community Development/Gender/Indigenous Peoples Officer	The Provincial Community Development/Gender/Ethnic Groups Officer (PCDGEGO) reports to the PPC. S/he will coordinate with the NPMO-based CDGEGO, and will be responsible for ensuring all DCOs are aware of their responsibilities under the provisions of the grant agreement, provide/facilitate any necessary support and training, and provide progress and monitoring reports to the DPM.	At least 3 years of experience in safeguards, and preferably with some experience on externally-funded projects with competence in spoken and written English.
Resettlement and Environment Officer	The Provincial Resettlement and Environment Officer (PREO) reports to the PPC. S/he will coordinate with the NPMO-based REO, and will be responsible for ensuring all DCOs are aware of their responsibilities under the provisions of the grant agreement, provide/facilitate any necessary support and training, and provide progress and monitoring reports to the PPC.	At least 3 years work experience in a related field, preferably on internationally supported projects with competence in spoken and written English.
DCO Management		
District Project Director	The District Project Director (DPD) reports to the PPD on the implementation of subprojects within his/her respective district, and provides oversight and guidance to the District Project Coordinator (part-time).	A senior government official with at least 7 years' experience working with multi-lateral banks/donors in the sector. Good command of spoken and written English.
District Project Coordinator	The District Project Coordinator (DPC) reports to the DPD, ensuring effective implementation of subproject activities at the district level. Main duties include coordinating development of district work plan and budget, coordinating with related government agencies and development partners in the implementation of subprojects and capacity building activities, preparation of DCO's work plan and budget, following up and monitoring field implementation, and reporting for PPMs.	A government official with at least 3 years project management experience with multi-lateral banks and/or donors in the sector with competence in spoken and written English.

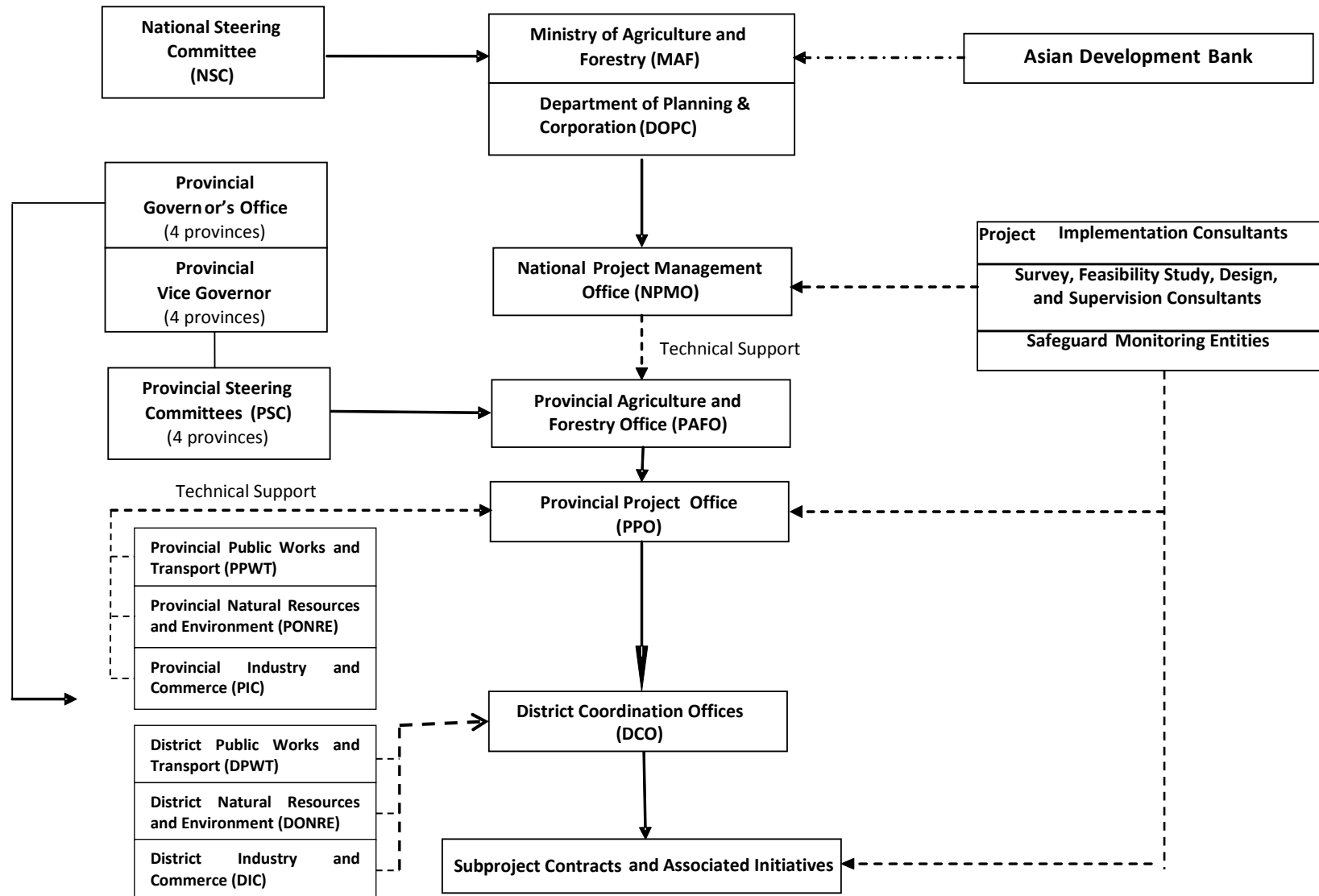
Position	Job Description	Requirements
DCO Implementation and Planning		
Implementation and Monitoring Officer	The Implementation and Monitoring Officer (IMO) reports to the DPC. Main duties of the IMO include assisting the DPC in coordinating with PPOs and the project implementation consultant in the planning for all activities within his/her respective district. Provides progress and monitoring reports to the DPC.	A government official with at least 3 years previous experience in the sector with some competence in English preferred.
Irrigation Engineer	The District Irrigation Engineer (DIE) reports to the DPC on all technical matters relating to irrigation for each subproject within his/her respective district. The main duties of the DIE include working and coordinating with the consultants on the feasibility studies, designs and construction of the subprojects. Prepares annual work plans, and provides progress and monitoring reports to the DPC.	A government official with at least 3 years of experience in the irrigation subsector, and preferably some experience on externally-funded projects. Tertiary qualified in the irrigation subsector with some competence in spoken and written English.
Land Registration Officers (2 per district)	The DONRE assigned District Land Registration Officers report to the DPC on all matters relating to land registration for each subproject within their respective district. The main duties of the officers include working with the provincial land registration officer and coordinating with the project implementation consultants on the survey of command areas, consultation with local stakeholders, and the preparation of cadastral maps and the adjudication process and issuance of title. Together with the provincial land registration officer, work as part of a mobile land titling team, and coordinate with the department of land administration, and maintain a dialogue with the WUGs and landowners on land titling issues. Work with WUGs to facilitate adjudication and issue of title, and provide progress and monitoring reports to the DPC.	At least 3 years of experience in some aspect of land administration, and preferably some experience on externally-funded projects. Some competence in spoken and written English would be preferable.
Agriculture Extension Officer	The District Agriculture Extension Officer (DAEO) reports to the DPC on all matters relating to the extension of agriculture extension for each subproject within his/her respective district. The DAEO will provide extension services to WUGs in the subprojects within his/her respective district. DAEO will work closely with the project implementation consultant, and provide progress and monitoring reports to the DPC.	At least 3 years of experience in agriculture extension, and preferably with some experience on externally-funded projects. Some competence in spoken and written English.
DCO Safeguards		
Safeguard/Community Development Officer	The District Safeguard/Community Development Officer (DSCO) reports to the DPC. S/he will coordinate with the safeguards officer in PPO, and will be responsible for ensuring all local stakeholders are aware of their safeguard responsibilities under the provisions of the grant agreement, and provide progress and monitoring reports to the DPC.	At least 3 years of work experience in a related field, preferably on internationally supported projects with competence in spoken and written English.

ADB = Asian Development Bank; DCO= department coordination office; MAF = Ministry of Agriculture and Forestry; NPMO= national project management office; NSC = National Steering Committee; PPO = Provincial Project Office.

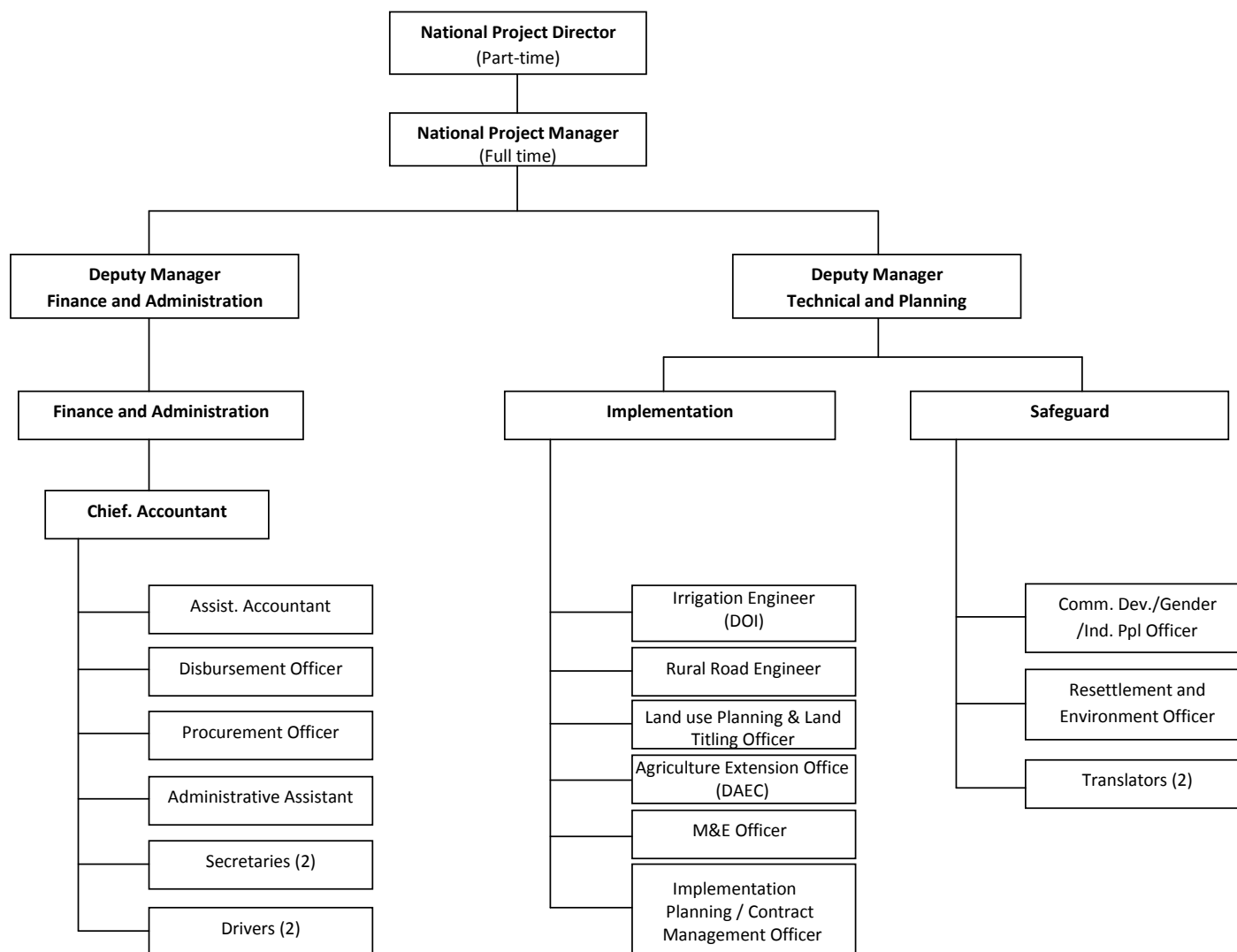
B. Key Persons Involved in Implementation

Executing Agency	
MAF	Dr. Phouangparisak Pravongviengkham Vice Minister MAF Telephone: +856 55 514042 Email address: pppravongviengkham@yahoo.com
	Mr. Xaypladeth Choulamany Director General DOPC, MAF Telephone: +856 21 415359 Email address: xaypladethchoulamany@yahoo.com
NPMO	Mr. Phaythoune Phomvixay National Project Manager Telephone: +856 21 990249 Email address npmo.nri@gmail.com Office Address: National Project Management Office Ban Phonexay, Saysetha District Vientiane, Lao PDR
ADB South East Asia Department Co-Mission Leaders	Yasushi Negishi Country Director Lao PDR Resident Mission ynegishi@adb.org Tel (856) 21 250444 Ext 112
	Ms. Sisavanh Phanouvong Sr. Project Officer Environment and Natural Resources ADB Lao Resident Mission Tel: (856-21) 250 444 Ext. 116 Email: sphanouvong@adb.org
	Mr. David Salter Sr. Natural Resources and Agriculture Specialist Environment, Natural Resources and Agriculture Division Tel: (856-21) 250 444 Ext. 138 Email: dsalter@adb.org

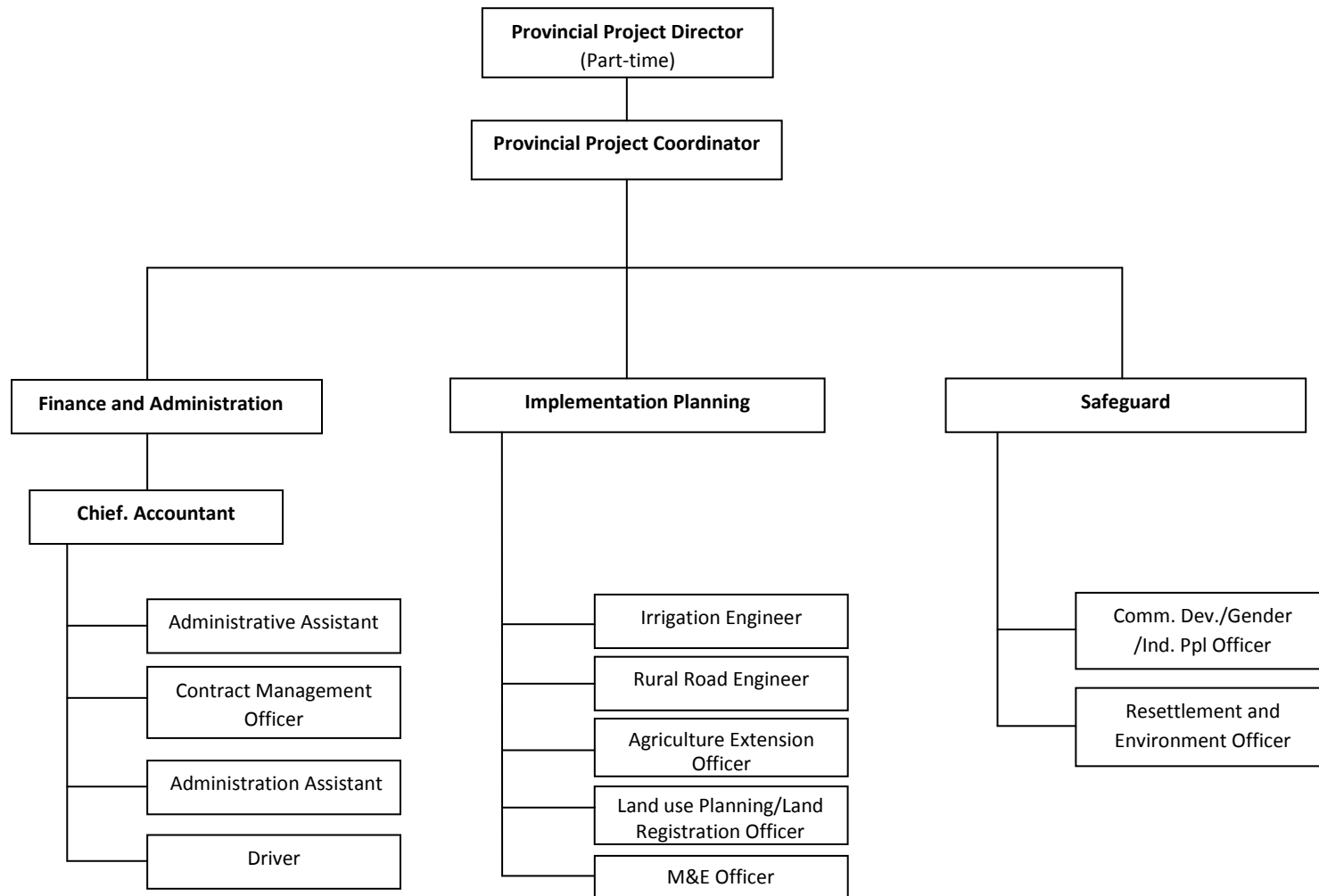
C. Overall Project Organization Structure

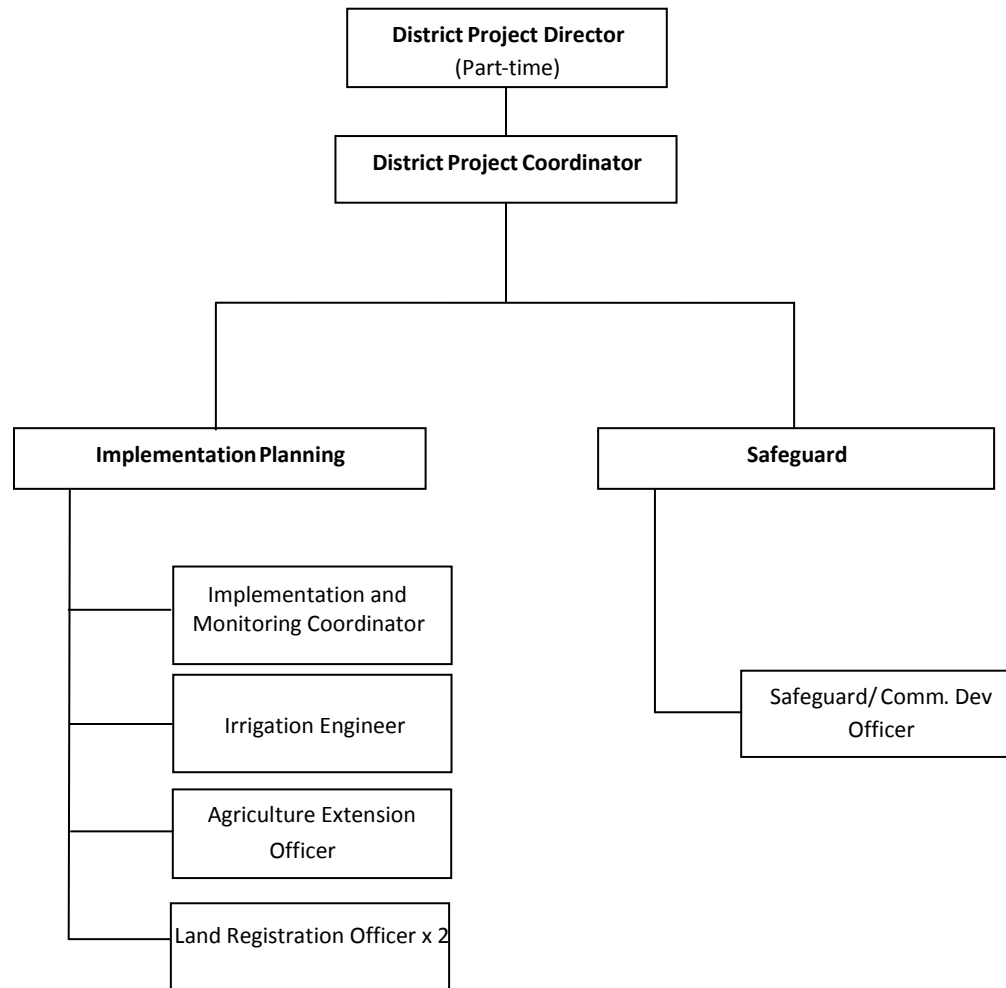


National Project Management Office



Provincial Project Office



District Coordination Office

D. Implementation Arrangements

1. Subprojects Identification and Selection

34. All subprojects eligible for financing under the Project will be pre-screened to ensure consistency with ADB and Lao PDR social and environmental safeguards. The following eligibility criteria, agreed between the Government of Lao PDR and ADB are used during the subproject identification and pre-screening phase:

- (i) Subprojects must be shown to contribute to strategic objectives of provincial and, where appropriate, district socio-economic development plans;
- (ii) Subprojects must have limited potential environmental impacts and conform with category B subprojects of ADB's environmental classification system and also with Category 1 as outlined in Lao PDR's Decree on Environmental Impact Assessment of April 2010;
- (iii) Subprojects must have no significant resettlement (no more than 200 severely affected persons) or land compensation implications as defined by Lao PDR Government and ADB definitions of what constitutes 'significant' resettlement;
- (iv) Subprojects must be located only in rural areas where the majority of beneficiaries are likely to be dependent upon agriculture for their livelihoods;
- (v) Subprojects must be able to demonstrate either increased agricultural productivity or improved access to facilitate the development of stronger market linkages;
- (vi) There must be demonstrated local commitment to the subproject with confirmation by beneficiaries (inclusive of women and ethnic groups), participating kumbans, and district authorities to that effect;
- (vii) The estimated cost of the subprojects must be in the range of \$0.7 to \$2.0 million (with any exceptions specifically justified);
- (viii) Subprojects likely to have recurrent expenditure requirements for their continued O&M will need to confirm financing arrangements for routine and periodic maintenance;
- (ix) In view of environmental issues and the potential impact rural infrastructure development can have on protected areas, an additional criteria is proposed that will specifically exclude subprojects that adjoin or pass through an existing or proposed protected area;
- (x) The benefits from each subproject must be independent and achieved directly from the investment under consideration, i.e. not dependent on subsequent adjoining subproject; and
- (xi) The subproject must not be located in any area where a major development, such as a new hydropower scheme, a mine, or a Special Economic Zone, is planned.

35. The subprojects are ranked by order of priority based on their expected contribution to the provincial socio economic development plan and the project objectives. The tentative list of candidate subprojects is in Supplementary Document 15.

2. Subproject Preparation and Approval

36. Careful planning of project activities requires consideration to the timing of the rainy season which lasts from May to October every year. During that period, limited if any construction activities can take place as a result of the heavy downpour which render any earthwork impossible. The implementation of subprojects has been planned to be carried out in four phases taking into consideration the rainy seasons and priority of subprojects. The first phase will comprise the two representative subprojects for which the feasibility studies have been completed. The second phase will comprise approximately seven subprojects. Recruitment of national consultants for preparation of feasibility studies, detailed design, bidding documents and construction supervision will begin shortly after grant effectiveness, and construction is planned to begin in quarter IV 2018. The third phase will comprise another seven subprojects; with the construction planned in quarter IV 2019. The fourth phase will comprise all remaining subprojects and construction is expected to begin immediately after the rainy season in 2020. Eligible subprojects will undergo the following preparation steps:

- (i) Preparation of feasibility study - including studies and plans for social and economic safeguards;
- (ii) Preparation of SIRs;
- (iii) Survey and preparation of detailed design;
- (iv) Preparation of bidding documentation;
- (v) Tendering for construction works; and
- (vi) Construction of subproject infrastructures

37. The preparation of feasibility studies, detailed design, and preparation of bidding documents will be carried out by national consultants to be recruited by the NPMO following consultants' qualifications selection (CQS) procedures. The NPMO will recruit national firms, likely one per province, to prepare feasibility studies, detailed design, bidding documents, and to carry out supervision of construction for each phase of implementation (total approximately 7 packages).⁸ Feasibility studies including social and environmental safeguard studies will be prepared following the model developed for the two representative subprojects.

38. The GIC, will provide support to the national consultants particularly in the areas of preparation of social and environmental safeguard studies and economic analysis. The GIC will also assist the NPMO in the review of feasibility studies and social and economic safeguards studies, and will be responsible for the preparation of SIRs. Such unquantified benefits must be documented to justify the eligibility of the subproject for financing. In particular, the review will ensure that the subprojects meet the following criteria:

- (i) subproject is shown to be technically feasible and the expected benefits have been clearly identified. If the estimated economic rate of return is below 12%, an EIRR of 10% is acceptable in the presence of substantial level of benefits that cannot be readily quantified;
- (ii) procurement packages have been clearly identified as well as the methods of procurement, cost estimates have been clearly identified and recorded and all sources of funding have been identified and agreed/confirmed;
- (iii) the relevant subproject investment report contains a detailed financing plan for operation and maintenance, including: the operations company is specified, and both a sufficient budget amount and corresponding source of funding are

⁸ Feasibility studies and detailed design for the two representative subprojects have already been prepared.

- specified and agreed upon by the relevant project province and other concerned parties;
- (iv) public hearings on the subproject proposal have been held in concerned kumbans, and measures for future public consultation and supervision;
- (v) a subproject is shown to have no major negative environmental or social impacts, and mitigation measures have been defined for minor impacts;
- (vi) a subproject is shown to have no significant resettlement impacts, and if such Subproject is categorized as Category B, a resettlement plan has been prepared in accordance with the Resettlement Framework, and the Beneficiary's laws and regulations, and ADB's Safeguard Policy Statement; and
- (vii) where necessary, a Resettlement Plan and an Ethnic Group Development Plan have been prepared.

39. In case that a candidate subproject does not meet the criteria provided in paragraph 38 above, it will be replaced by the next priority candidate subproject for the respective project province under the List of Eligible Subprojects (ANNEX A). If candidate subprojects not listed in the Annex A are to be considered, they will be examined and screened by MAF with the support from an independent consultant acceptable to both ADB (separately recruited) and the government, and submitted to ADB for approval.

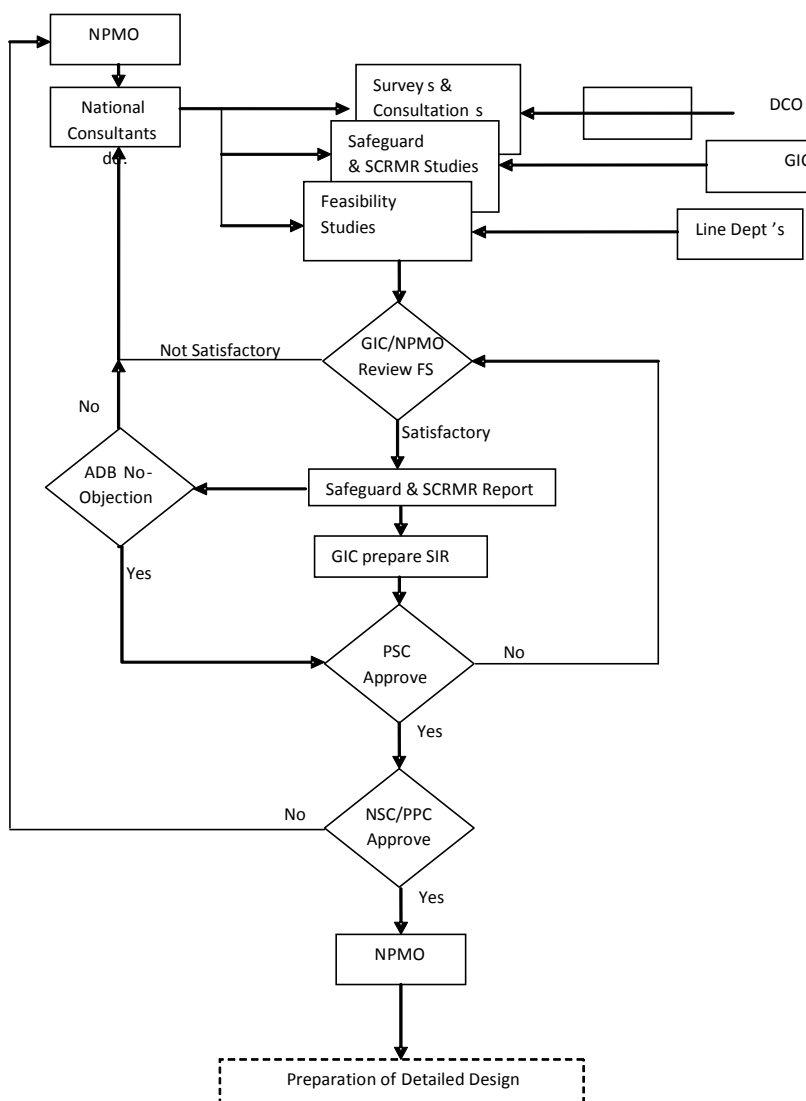
3. Subproject Climate Resilient Measures

40. Climate instability is anticipated and a number of countermeasures will be taken, including (i) strengthening the weir design to withstand more intense stream flows; (ii) constructing passages to reduce stress on aquatic life by enabling aquatic migration up- and downstream of the weirs; (iii) concrete-lining canals to the extent possible for more efficient utilization of water; (iv) increasing the stability of the PRI and the health of the watersheds through soil and water conservation initiatives; and (v) involving WUGs and FPGs in the implementation of watershed management plans.

41. Prior to ADB's clearance for proceeding with the implementation of each subproject, the NPMO will submit to ADB a Subproject Climate Resilience Measures Report (SCRMR) as part of feasibility study report. The SCRMR will detail the incremental actions taken against each of the above five identified countermeasures to be included in subproject design. The SCRMR will include clear information on the engineering design modifications, watershed protection measures and the costs of the incremental investments.

42. After the review of the feasibility studies by the GIC and necessary adjustment as required, the GIC will prepare the SIR for the subproject. All safeguard studies and the SCRMR will be submitted to ADB for no-objection. Upon receiving ADB's no-objection, the SIR and related feasibility study will be submitted to each PPO for approval of the PSC. Following ratification by the PSC, and no objection from ADB on the safeguard studies, the feasibility study and SIR will be submitted to the NSC/PPC to authorize the allocation of project funds for the preparation of the next stage of preparation. The diagram below shows a summary work flow for the preparation and approval process for feasibility studies:

Preparation and Approval of Subproject Feasibility Studies



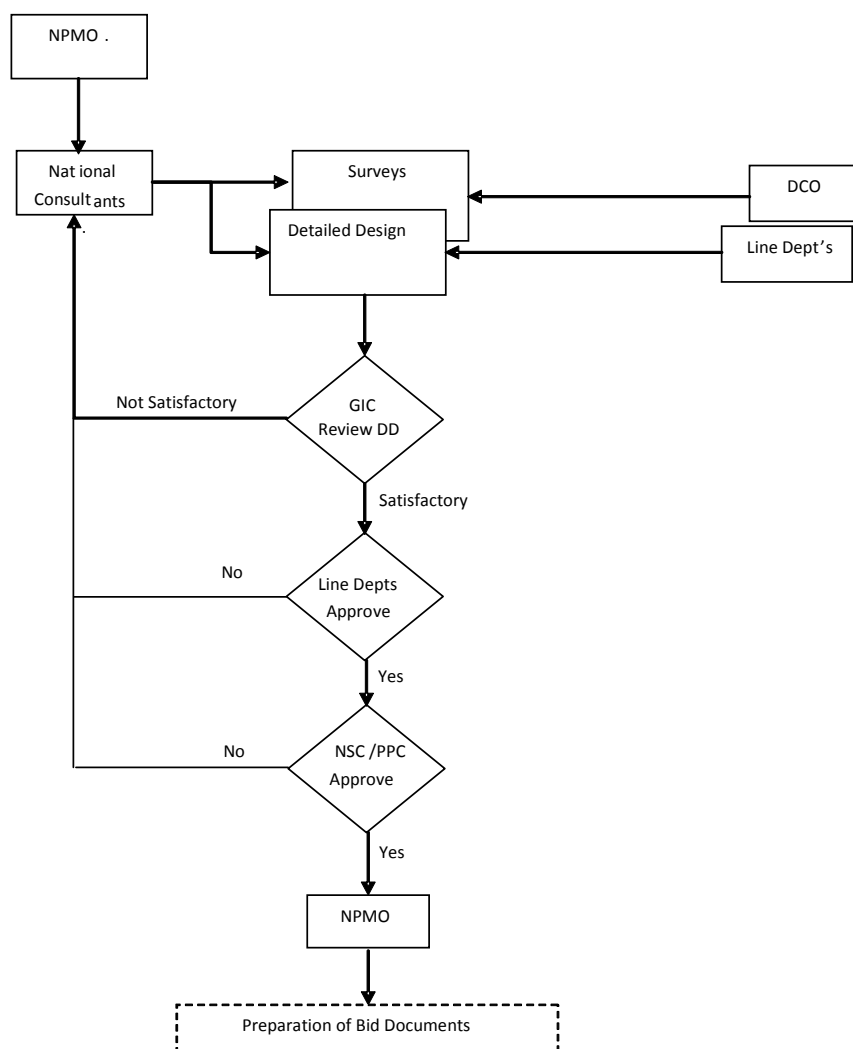
DCO= department coordination office; FS= feasibility study; NPMO= national project management office; NSC= national steering committee; GIC= grant implementation consultant; PPC= project procurement committee; PSC= procurement steering committee; SCRMR= subproject climate resilience measures report; SIR= subproject investment report.

a. Detailed Design of Subprojects

43. Once the feasibility studies have been approved by the NSC/PPC, the NPMO will give the order to proceed to the national consultants to carry out surveys and detailed engineering designs for civil works component. The DCO will assist in carrying out the surveys as necessary and the relevant line agencies will provide support to the national consultants as required. The detailed designs will be reviewed by the GIC and NPMO to ensure that the project design meets the required Lao standards and specifications for its type of infrastructure. Once endorsed by

GIC and NPMO they will be submitted to NSC/PPC for approval. The diagram below shows a summary work flow for the preparation and approval process for detailed design of subprojects:

Preparation and Approval of Detailed Design



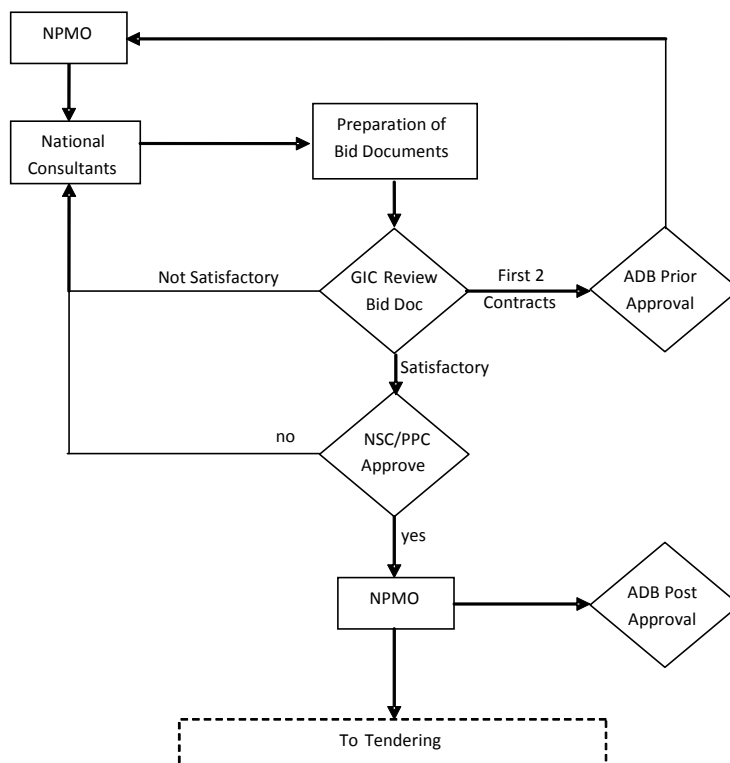
DCO= department coordination office; DD= detailed design; Dept's= departments; NPMO= national project management office; NSC= national steering committee; GIC= grant implementation consultant; PPC= project procurement committee.

b. Preparation of Bidding Document

44. Once the detailed designs are approved, the NPMO will give the order to proceed to the national consultants to prepare bid documents following national competitive bidding (NCB) procedures. The bid documents will be prepared based on ADB standard format documents. The draft English language version of the procurement documents for the first two contracts will be submitted for ADB review and prior approval regardless of the estimated contract amount. ADB-approved procurement documents will be used as a model for all subsequent NCB procurement and will only require post approval of ADB. The GIC will review the bidding

documents before they are submitted to the NSC/PPC for approval. The diagram below shows a summary work flow for the preparation and approval of bidding documents for subprojects:

Preparation and Approval of Bid Documents

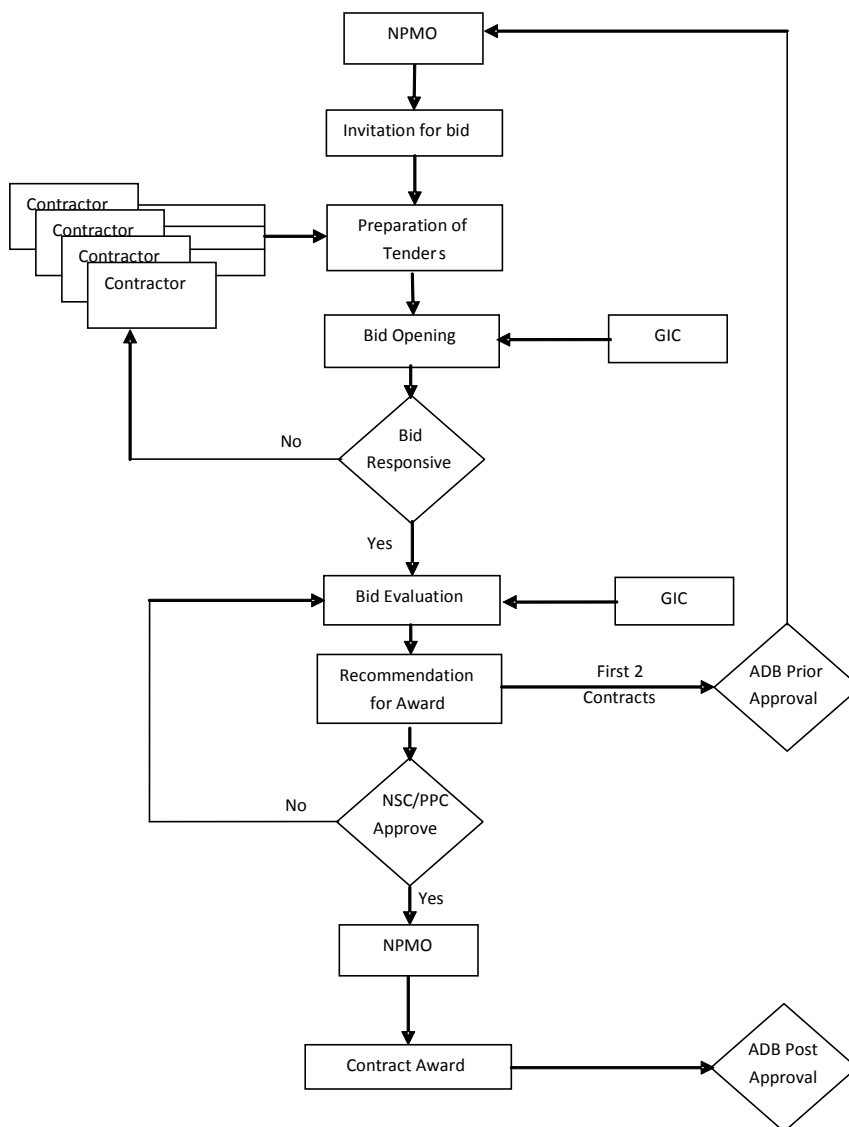


ADB = Asian Development Bank; Doc.= documents; NPMO= national project management office; NSC= national steering committee; GIC= grant implementation consultant; PPC= project procurement committee.

c. Procurement of Works Contracts

45. Procurement of civil works contract for the subprojects will be carried out by the NPMO following NCB procedures in accordance with ADB's Procurement Guidelines (2015, as amended from time to time). The NSC/PPC will approve all contracts before works can start. The GIC will assist the NPMO in the opening and evaluation of tenders. The diagram below shows a summary work flow for the tendering and contract award process:

Tendering and Contract Award



ADB = Asian Development Bank; NPMO= national project management office; NSC= national steering committee; GIC=grant implementation consultant; PPC= project procurement committee.

d. Construction Supervision

46. Upon mobilization of the contractors, the NPMO will issue an order to proceed to the national consulting firm to carry out supervision of construction works. The NPMO will also recruit safeguard monitoring entities to monitor the implementation of social and environmental safeguard measures identified in the Resettlement Plan (RP), the Environmental Management Plan (EMP), the Gender Action Plan (GAP) and the Indigenous Peoples Plan (IPP). The monitoring entities will be recruited following CQS procedures. The DCO will provide assistance

and support to both the national consultants and the safeguard monitoring entities in supervision and monitoring of the implementation of the subprojects.

e. Identification of Productivity- and Impact-Enhancing Initiatives

47. The second component of the project includes support for associated initiatives that will enhance the impact from, and sustainability of investments in rural infrastructure. These initiatives will be identified during the subproject feasibility studies, based on consultation with the beneficiaries and various stakeholders, and will become an integral part of the subproject. The cost of associated initiatives will be included in the investment cost of each subproject. In principle the cost and benefits of the associated initiatives will be taken into consideration in the economic analysis of each subproject. Each subproject may have one or more associated initiatives, but each initiative must be closely linked to the proposed infrastructure improvement and show a clear correlation to the project objective to improve agricultural productivity and market efficiency. The GIC will assist the identification and implementation of associated initiatives in all four provinces as required.

48. The associated initiatives will be selected based on the consultation with beneficiaries in accordance with Stakeholder Communication Strategy (Consultation, Participation, and Awareness) developed in Section IX. E. of the PAM. A tentative list of the associated initiatives includes the following compulsory and optional productivity- and impact-enhancing initiatives for each type of infrastructure (see tables in the next page).

<u>COMPULSORY</u> Initiatives	Infrastructure Type	Activities/ Measures	Brief Description
Infrastructure Maintenance	Irrigation rehabilitation	WUG establishment and operating modalities	Train beneficiaries and selected DAFO staff in procedures for establishing WUGs outlining the roles and responsibilities for officials appointed to management positions therein. Training will cover essential steps needed but will also develop communications skills, ensure gender equity, address participation of disadvantaged households and be inclusive of all ethnic groups.
		Setting, authorizing and collection of irrigation service or water charges/fees	Depending on the nature and complexity of structures, there will be a requirement for different levels of services and responsibilities in maintaining and operating the irrigation systems. To maintain their functioning, irrigation service fees must be set at realistic levels and need to be agreed to by all water users. Training will be provided in the considerations for setting and approaches for collecting and transparently managing irrigation service fees.
		Operation and maintenance training for scheme managers and operators	While essentially simple to operate, there will remain issues of water management, gate management, water release, reservoir cleaning etc. that need to be programmed and agreed to by all beneficiaries. Practical training will ensure those responsible for these functions are fully competent. All users need to understand and agree to water allocations so that downstream users have access to agreed water flows.
	Rural access road rehabilitation	Village maintenance committee establishment and operations	Train villagers and village authorities in the establishment and operations of village maintenance committees outlining the roles and responsibilities for officials appointed to management positions therein. Training will cover essential steps needed but will also develop communications skills, ensure gender equity and address participation of disadvantaged and other ethnic groups within the village committee.
		Labor based routine maintenance requirements	Depending on the nature and complexity of alignments (including drainage structures and embankments) being rehabilitated, there will be a requirement for different levels of maintenance to keep the road in functional condition. Local resources – the primary beneficiaries will be expected to contribute labor in executing routine maintenance activities. The training will include the development of routine maintenance activities and the method for assigning responsibility for each section of the road to be rehabilitated together with the development of a

<u>COMPULSORY</u> Initiatives	Infrastructure Type	Activities/ Measures	Brief Description
			maintenance plan.
		Periodic and emergency repair procedures and requirements	Training in the development of procedures to effect emergency and periodic maintenance requiring additional equipment and resources from district authorities.
Land Use Planning and Management		Water catchment identification and zoning	Will be carried out for the water catchment from which water drains towards the rehabilitated irrigation scheme, to ensure the sustainable provision of environmental catchment services and to secure the investment.
		Participatory land use planning	Will be conducted in the villages/ kumbans within the water catchment to translate catchment zoning into applicable and community based land and natural resource management including appropriate land use practices, to protect environment functions and to ensure sustainable livelihoods.
		Land registration and land titling	Will be conducted for the land parcels within the rehabilitated or extended irrigation scheme to ensure land tenure security for involved villagers and to secure the investment. Land titles to be in both spouses' names.
		Awareness raising	Will be conducted in all villages in the water catchment, to raise awareness on environmental functions and biodiversity, but also on rights and responsibilities of villagers related to different land uses including forests.
		Enforcement of land-use plans and related regulation	Will be conducted in all villages of the catchment after PLUP has been implemented and results were approved by authorities, to enforce agreed land use zones and related regulations.

OPTIONAL Initiatives	Type of Commodity				
	Maize	Rice	Cassava	Tea	Rubber
Production	Support for technical extension services and farmer cross-visits directed at: (i) improving upland land preparation, (ii) maintaining soil fertility with zero tillage, (iii) vary time of planting for off-season pricing and drying constraints, and (iv) promoting single varieties.	Support for technical extension services and farmer cross-visits to introduce SRI, dry-seeding techniques and other improved production techniques. Promotion of contract farming arrangements for both WS and DS rice based on single varieties. Pilot certified seed to demonstrate yield /quality gains and promote 3 year seed replacement. Support for registered and certified seed production with Louang-Namtha Seed Multiplication Centre including possible extension of certified seed multiplication.	Support for technical extension services and farmer cross-visits directed at: (i) varietal trials, (ii) fertilizer trials and (iii) pilot use of simple harvesting tools (and local production of such tools).	Support for technical extension services and farmer cross-visits to develop organic tea farms based on (i) legume ground covers (ii) legume or fruit shade trees, (iii) pruning methods and (iv) organic fertilizer use, and (v) pre-germinated seed planting. Domesticated cultivation of proven (based on cupping and chemical analysis) high quality, indigenous, wild or ancient cultivated tea varieties. Pilot expanded tea seedling production and distribution. Pilot reproduction of quality Yunnan tea clones.	Support for technical extension services and farmer cross-visits to recognize rubber disease, treatment, and management. Training of village level rubber specialist farmers as Village Extension Agents through an intensive training program.
Post Harvest	Develop quality standards and pilot methods for on-farm quality assessment including use of moisture meters and train producers and buyers in application of standards. Pilot use of drying facilities, bulk storage and	Develop quality standards and pilot methods for on-farm quality assessment including use of moisture meters and train producers and buyers in application of standards. Pilot use of drying facilities, bulk storage and	Develop quality standards and pilot methods for on-farm quality assessment including use of moisture meters and train producers & buyers in application of standards.	Develop standard fresh leaf quality standards (based on picking quality, e.g. shoot and one leaf, two leaf etc.) accepted by local buyers and train producers and buyers in application of such standards.	Develop quality standards and pilot methods for on-farm quality assessment and train producers and buyers in application of such standards. Pilot tub-lump quality

OPTIONAL Initiatives	Type of Commodity				
	Maize	Rice	Cassava	Tea	Rubber
	transport loading facilities at village level.	transport loading facilities at village level.	Pilot use of drying facilities, bulk storage and transport loading facilities at village level. Pilot supply of moisture meters for quality assessment.		assurance and improved storage systems at kumban level.
Processing	Pilot new shelling technologies and development / upgrading of local shelling services.		Pilot mechanical cassava slicing and/or drying technologies to reduce current harvesting bottlenecks and labor needs. Support local commercial cassava chipping and/or drying services.	Provide maocha tea processing training and piloting of improved withering stoves and simple solar dryers to reduce smoke contamination. Provide household training in black tea (red tea) and basic white tea processing methods. Provide study grants for training / apprenticeships in tea processing and grading locally and in key markets / competitor locations.	Pilot supply of simple equipment to enable latex dry rubber content (DRC) assessment at community levels to allow for more effective price negotiation. Provide training and pilot equipment for ribbed smoked sheet production including waste water treatment and factory management.
Market Linkages	Develop and support production and marketing groups to negotiate supply contracts with buyers. Develop supply contracts	Development of supply contracts with quality specifications/price incentives and associated contractual obligation training.	Develop supply contracts with quality specifications / price incentives and associated contractual obligation training.	Support village or village group processing facilities owned by community but managed by local tea processing companies on fixed contract duration	Through producer - private company partnerships, establish village or village group ribbed smoked sheet

OPTIONAL Initiatives	Type of Commodity				
	Maize	Rice	Cassava	Tea	Rubber
	<p>with quality specifications / price incentives and associated contractual obligation training.</p> <p>Support processors / traders to undertake export market assessments to identify price / quality relationship and new market opportunities.</p>	<p>Support evolution of Water User Groups to formally registered Water User Associations.</p> <p>Support processors / traders to undertake export market assessments to identify price / quality relationship and new market opportunities.</p> <p>Support organic / green food market assessment in current export market destinations and, if warranted, certification or chemical residue free status on pilot basis.</p>	<p>Support major processors / traders to undertake end-export market assessments to identify alternative buyers and required quality standards and pricing.</p>	<p>with profit division between community owners and tea processor.</p> <p>Develop supply contracts between producer groups and processors/traders with quality specifications and price incentives and associated contract obligation training.</p> <p>Support processors / traders to undertake organic / green food market assessment in export market destinations and, as warranted, support certification - including organic producer association (bylaws, enforcement systems etc.) or chemical residue free status on pilot basis.</p> <p>Promote the northern Lao PDR tea industry through an annual Phongsali Tea Festival and competition with international buyers invited.</p>	<p>processing facilities (including waste water treatment and management.</p> <p>Develop supply contracts between producer groups and processors/traders with quality specifications and price incentives and associated contract obligation training.</p>

IV. COSTS AND FINANCING

49. The overall project is estimated to cost \$62.2 million (Table 4).

**Table 4: Project Investment Plan
(\$ million)**

Item	Current Amount ^a	Additional Financing ^b	Total
A. Base Cost^c			
1. Rural infrastructure development	16.2	29.1	45.2
2. Productivity and impact enhancement	1.4	3.1	4.5
3. Institutional capacity building	2.8	2.1	4.9
4. Project implementation and management	2.7	2.5	5.3
Subtotal (A)	23.1	36.8	59.9
B. Contingencies^d	1.5	0.8	2.3
Total (A+B)	24.6	37.6	62.2

^a Refers to the amount of the original project. Includes taxes and duties of \$2.2 million financed from ADB grant.

^b Includes taxes and duties of \$3.4 million, of which \$3.3 million of applicable taxes and duties will be financed by the ADB grant and the balance by government contribution.

^c In mid-2016 prices.

^d Physical contingencies computed at 0% for civil works⁹, 5% for consulting services and 10% for resettlement, training and project management operations costs. Price contingencies computed at 1.4% in 2017, 1.5% in 2018 and thereafter for foreign currency costs; 3.5% in 2017 and 2018 and 4% in 2019 and thereafter for local currency costs; and includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

Note: Figures may not sum due to rounding.

Source: Asian Development Bank estimates.

50. The government has requested a grant not exceeding \$35.6 million from ADB's Special Funds resources as additional financing to help finance the overall project. The grant will fund PRI subprojects (including associated initiatives), capacity building, project management and consulting services, inclusive of the applicable taxes and duties.¹⁰ The government will finance the equivalent of \$2.0 million for salaries of full-time permanent counterpart staff, office space, land acquisition and resettlement costs, and the clearing of unexploded ordnance and land mines, inclusive of applicable taxes and duties. The government will make the grant proceeds available to the EA and implementing agencies on a grant basis. The financing plan is presented in Table 5.

⁹ No physical contingencies are provided in the civil works contracts of the current project. All the contract variations, when needed, are done within the contract amount.

¹⁰ ADB will finance taxes and duties for the expenditure items it covers, operating costs (i.e., incremental project management costs but not include any salaries or remuneration other than travel costs and daily subsistence allowance for government officials who work for the project), transportation costs, and interest and bank charges related to the imprest account. The following principles were followed in determining taxes and duties to be financed by ADB: (i) the amount does not represent an excessive share of the project; (ii) the taxes and duties apply only to ADB-financed expenditures; (iii) the amount is within the thresholds identified during the country partnership strategy preparation process; and (iv) financing of taxes and duties is material and relevant to project success.

Table 5: Financing Plan (\$ million)

Source	Current^a		Additional Financing		Total	
	Amount (\$ million)	Share of Total (%)	Amount (\$ million)	Share of Total (%)	Amount (\$ million)	Share of Total (%)
Asian Development Bank	23.0	93.4	35.6	94.7	58.6	94.2
Special Funds resources (grant)	23.0	93.4	35.6	94.7	58.6	94.2
Government	1.2	4.8	2.0	5.4	3.2	5.1
Beneficiaries ^b	0.5	1.8	0.0 ^b	0.0	0.5	0.7
Total	24.6	100.0	37.6	100.0	62.2	100.0

^a Refers to the amount of the original project.

^b For additional financing, the estimated beneficiary contribution for the maintenance of PRI is not included in Table 5 since it is in-kind contribution but is estimated to be worth \$0.4 million..

Note: Figures may not sum due to rounding.

Source: Asian Development Bank estimates.

I. Detailed Cost Estimates by Expenditure Category (Additional Financing)

	(Kip Billion)			(US\$ '000)			% Total Base Costs
	Local	Foreign	Total	Local	Foreign	Total	
I. Investment Costs							
A. Civil Works							
Construction Contracts	109.8	73.2	183.1	13,526.8	9,017.8	22,544.6	61
B. Associated Initiatives							
Land Use Planning	2.0	-	2.0	250.0	-	250.0	1
Land Titling	8.1	-	8.1	1,000.0	-	1,000.0	3
Group Strengthening	2.0	-	2.0	250.0	-	250.0	1
Technical Support Services	2.0	-	2.0	250.0	-	250.0	1
Marketing and Processing Equipment	2.0	-	2.0	250.0	-	250.0	1
Subtotal	16.2	-	16.2	2,000.0	-	2,000.0	5
C. Resettlement	3.5	-	3.5	428.3	-	428.3	1
D. Vehicles and Equipment							
Vehicles	1.8	3.1	4.9	223.2	381.3	604.5	2
Motorcycles	0.4	0.4	0.7	45.0	45.0	90.0	-
Equipment	0.6	1.1	1.7	74.0	136.2	210.2	1
Subtotal	2.8	4.6	7.3	342.2	562.5	904.7	2
E. Consulting Services							
1. Survey, Design and Supervision	15.0	1.7	16.6	1,844.1	204.9	2,049.0	6
2. Project Implementation Consultants							
International Consultants	1.5	13.9	15.3	179.1	1,708.1	1,887.3	5
National Consultants	10.8	-	10.8	1,329.4	-	1,329.4	4
Consultant Support Costs	1.9	1.9	3.8	232.0	232.0	464.0	1
Subtotal	14.1	15.8	29.9	1,740.6	1,940.1	3,680.7	10
Subtotal	29.1	17.4	46.5	3,584.7	2,145.0	5,729.7	16
F. Training							
National Training	0.5	0.2	0.6	56.2	21.8	78.0	-
Provincial Training	0.4	0.0	0.4	45.0	5.0	50.0	-
District Training	0.7	0.1	0.7	81.0	9.0	90.0	-
Subtotal	1.5	0.3	1.8	182.2	35.8	218.0	1
G. Studies	1.3	1.9	3.2	160.0	240.0	400.0	1
H. Implementation and Supervision							
Government Staff	11.9	-	11.9	1,460.0	-	1,460.0	4
Incremental Staff	15.3	-	15.3	1,880.0	-	1,880.0	5
Office Operation	4.6	1.0	5.6	562.0	121.8	683.8	2
Vehicle and MC Operation	0.4	0.4	0.8	48.8	48.8	97.5	-
Subtotal	32.1	1.4	33.5	3,950.8	170.5	4,121.3	11
I. Unallocated	4.1	-	4.1	500.0	-	500.0	1
Total BASELINE COSTS	200.4	98.8	299.2	24,675.0	12,171.7	36,846.6	100
Physical Contingencies	2.4	1.0	3.5	301.4	127.9	429.2	1
Price Contingencies	5.0	1.8	6.8	240.4	83.8	324.2	1
Total PROJECT COSTS	207.9	101.6	309.5	25,216.7	12,383.3	37,600.0	102

All taxes and duties with respect to ADB-financed expenditure items will be financed by the grant.

Source: Asian Development Bank estimates

II. Allocation and Withdrawal of Grant Proceeds

Northern Rural Infrastructure Development Sector Project – Additional Financing			
CATEGORY		ADB FINANCING	
Number	Item	Amount Allocated [\$] Category Subcategory	Percentage and Basis for Withdrawal from the Grant Account
1	Project Costs	35,600,000	100 percent of total expenditure claimed
	Total	35,600,000	

III. Detailed Cost Estimates by Financier (Additional Financing)

(US\$ '000)	The Government		ADB Grant		Total		Duties & Taxes ^a
	Amount	%	Amount	%	Amount	%	
I. Investment Costs							
A. Civil Works							
Construction Contracts	0.0	-	22,544.6	100.0	22,544.6	60.0	2,254.5
B. Associated Initiatives							
Land Use Planning	-	-	250.0	100.0	250.0	0.7	25.0
Land Titling	-	-	1,000.0	100.0	1,000.0	2.7	100.0
Group Strengthening	-	-	250.0	100.0	250.0	0.7	25.0
Technical Support Services	-	-	250.0	100.0	250.0	0.7	25.0
Marketing and Processing Equipment	-	-	250.0	100.0	250.0	0.7	25.0
Subtotal	-	-	2,000.0	100.0	2,000.0	5.3	200.0
C. Resettlement	480.0	100.0	-	-	480.0	1.3	-
D. Vehicles and Equipment							
Vehicles	-	-	608.7	100.0	608.7	1.6	213.1
Motorcycles	0.0	-	90.6	100.0	90.6	0.2	44.4
Equipment	0.0	-	211.7	100.0	211.7	0.6	-
Subtotal	0.0	-	911.0	100.0	911.0	2.4	257.5
E. Consulting Services							
1. Survey, Design and Supervision	-	-	2,151.5	100.0	2,151.5	5.7	215.1
2. Project Implementation Consultants							
International Consultants	0.0	-	2,050.0	100.0	2,050.0	5.5	168.2
National Consultants	0.0	-	1,444.4	100.0	1,444.4	3.8	126.7
Consultant Support Costs	0.0	-	506.6	100.0	506.6	1.3	12.4
Subtotal	0.0	-	4,001.1	100.0	4,001.1	10.6	307.3
Subtotal	0.0	-	6,152.5	100.0	6,152.5	16.4	522.4
F. Training							
National Training	-	-	86.2	100.0	86.2	0.2	-
Provincial Training	0.0	-	55.4	100.0	55.4	0.1	-
District Training	0.0	-	100.5	100.0	100.5	0.3	-
Subtotal	0.0	-	242.1	100.0	242.1	0.6	-
G. Studies	-	-	400.0	100.0	400.0	1.1	-
H. Implementation and Supervision							
Government Staff	1,520.0	100.0	-	-	1,520.0	4.0	134.8
Incremental Staff	0.0	-	1,957.3	100.0	1,957.3	5.2	40.6
Office Operation	0.0	-	780.7	100.0	780.7	2.1	-
Vehicle and MC Operation	0.0	-	111.7	100.0	111.7	0.3	-
Subtotal	1,520.0	34.8	2,849.7	65.2	4,369.7	11.6	175.4
I. Unallocated	-	-	500.0	100.0	500.0	1.3	-
Total PROJECT COSTS	2,000.0	5.3	35,600.0	94.7	37,600.0	100.0	3,409.8

^a All taxes and duties with respect to ADB-financed expenditure items will be financed by the grant.

Source: Asian Development Bank estimates

IV. Detailed Cost Estimates by Outputs/Components (Additional Financing)

(US\$ '000)	Rural Infrastructure Development	Productivity and Impact Enhancement	Institutional Capacity Building	Project Implementation and Management	Total	Physical Contingencies	
						%	Amount
I. Investment Costs							
A. Civil Works							
Construction Contracts	22,544.6	-	-	-	22,544.6	-	-
B. Associated Initiatives							
Land Use Planning	-	250.0	-	-	250.0	-	-
Land Titling	-	1,000.0	-	-	1,000.0	-	-
Group Strengthening	-	250.0	-	-	250.0	-	-
Technical Support Services	-	250.0	-	-	250.0	-	-
Marketing and Processing Equipment	-	250.0	-	-	250.0	-	-
Subtotal	-	2,000.0	-	-	2,000.0	-	-
C. Resettlement	428.3	-	-	-	428.3	10.0	42.8
D. Vehicles and Equipment							
Vehicles	372.0	-	232.5	-	604.5	-	-
Motorcycles	90.0	-	-	-	90.0	-	-
Equipment	170.2	-	40.0	-	210.2	-	-
Subtotal	632.2	-	272.5	-	904.7	-	-
E. Consulting Services							
1. Survey, Design and Supervision	2,049.0	-	-	-	2,049.0	5.0	102.5
2. Project Implementation Consultants							
International Consultants	-	535.9	-	1,351.4	1,887.3	5.0	94.4
National Consultants	-	447.1	-	882.3	1,329.4	5.0	66.5
Consultant Support Costs	-	151.3	-	312.7	464.0	5.0	23.2
Subtotal	-	1,134.3	-	2,546.4	3,680.7	5.0	184.0
Subtotal	2,049.0	1,134.3	-	2,546.4	5,729.7	5.0	286.5
F. Training							
National Training	-	-	78.0	-	78.0	10.0	7.8
Provincial Training	-	-	50.0	-	50.0	10.0	5.0
District Training	-	-	90.0	-	90.0	10.0	9.0
Subtotal	-	-	218.0	-	218.0	10.0	21.8
G. Studies	-	-	400.0	-	400.0	-	-
H. Implementation and Supervision							
Government Staff	1,035.0	-	425.0	-	1,460.0	-	-
Incremental Staff	1,690.0	-	190.0	-	1,880.0	-	-
Office Operation	147.8	-	536.0	-	683.8	10.0	68.4
Vehicle and MC Operation	52.5	-	45.0	-	97.5	10.0	9.8
Subtotal	2,925.3	-	1,196.0	-	4,121.3	1.9	78.1
I. Unallocated	500.0	-	-	-	500.0	-	-
Total BASELINE COSTS	29,079.4	3,134.3	2,086.5	2,546.4	36,846.6	1.2	429.2
Physical Contingencies	62.9	-	79.9	286.5	429.2	-	-
Price Contingencies	134.3	-	53.5	136.3	324.2	3.2	10.5
Total PROJECT COSTS	29,276.6	3,134.3	2,219.9	2,969.2	37,600.0	1.2	439.7
Taxes ^a	2,556.0	200.0	131.4	522.4	3,409.8	0.7	24.9
Foreign Exchange	9,507.7	-	551.7	2,324.0	12,383.3	1.1	132.0

^a All taxes and duties with respect to ADB-financed expenditure items will be financed by the grant.

Source: Asian Development Bank estimates

Notes: Costs in mid-2016 prices.

Physical contingencies computed at 0% for civil works, 5% for consulting services and 10% for resettlement, training and project management operations costs. Price contingencies computed at 1.4% in 2017, 1.5% in 2018 and thereafter for foreign currency costs; 3.5% in 2017 and 2018 and 4% in 2019 and thereafter for local currency costs; and includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate. ADB will finance taxes and duties for the expenditure items it covers, operational costs (i.e., incremental project management costs but not include any salaries or remunerations other than travel costs and daily subsistence allowance for government officials who work for the project), transportation costs, and interest and bank charges related to the imprest/sub accounts, civil works and equipment, vehicles for the NPMO, consulting services, stakeholder consultations, NPMO implementation costs, incremental project management staff and all project operation costs. The government counterpart contribution will finance full-time permanent counterpart staff, office space, resettlement and land acquisition, and clearing of unexploded ordnance and land mine clearing, inclusive of applicable taxes and duties.

Source: ADB staff estimates

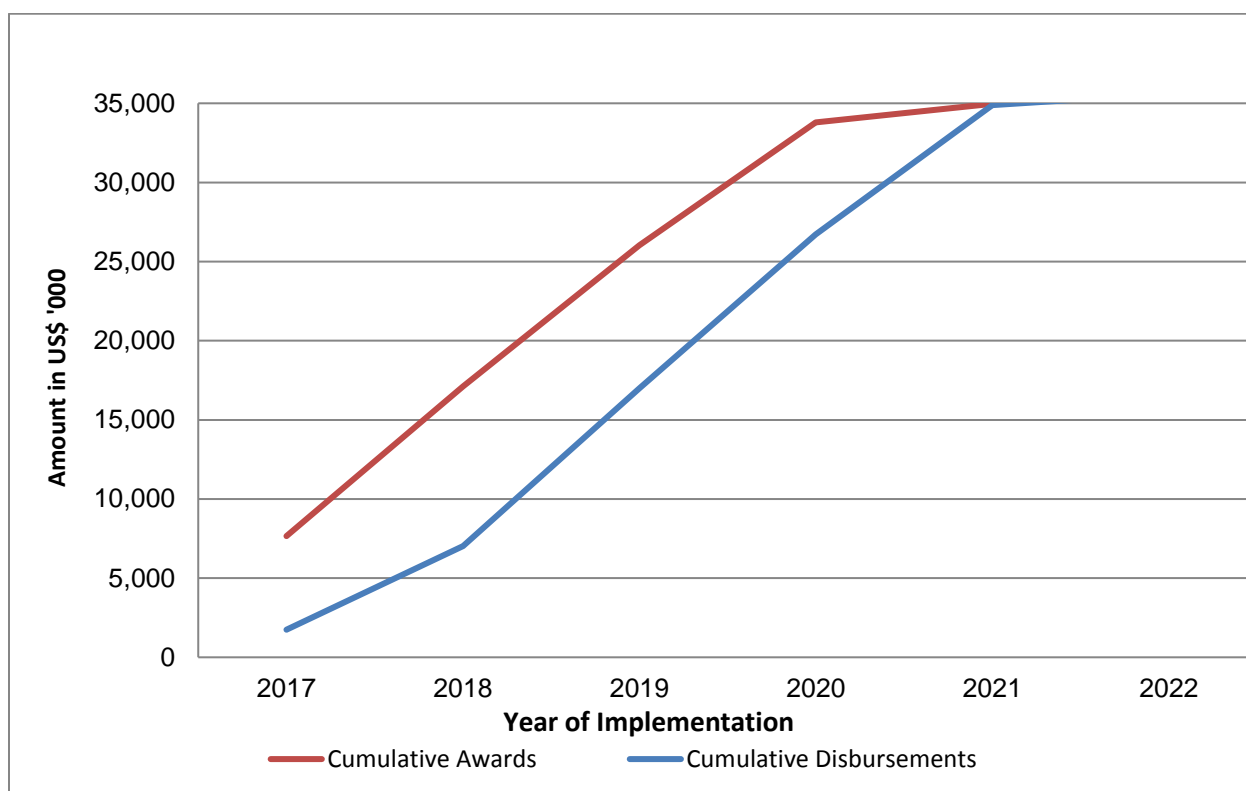
V. Detailed Cost Estimates by Year (Additional Financing)

(US\$ '000)	Base Cost						Total
	2017	2018	2019	2020	2021	2022	
I. Investment Costs							
A. Civil Works							
Construction Contracts	450.9	3,381.7	6,763.4	6,763.4	5,185.3	-	22,544.6
B. Associated Initiatives							
Land Use Planning	50.0	50.0	50.0	50.0	50.0	-	250.0
Land Titling	200.0	200.0	200.0	200.0	200.0	-	1,000.0
Group Strengthening	50.0	50.0	50.0	50.0	50.0	-	250.0
Technical Support Services	50.0	50.0	50.0	50.0	50.0	-	250.0
Marketing and Processing Equipment	50.0	50.0	50.0	50.0	50.0	-	250.0
Subtotal	400.0	400.0	400.0	400.0	400.0	-	2,000.0
C. Resettlement	85.7	342.7	-	-	-	-	428.3
D. Vehicles and Equipment							
Vehicles	604.5	-	-	-	-	-	604.5
Motorcycles	90.0	-	-	-	-	-	90.0
Equipment	210.2	-	-	-	-	-	210.2
Subtotal	904.7	-	-	-	-	-	904.7
E. Consulting Services							
1. Survey, Design and Supervision	81.0	474.2	636.2	614.7	243.0	-	2,049.0
2. Project Implementation Consultants							
International Consultants	478.8	413.4	409.4	293.7	143.1	148.9	1,887.3
National Consultants	269.2	330.7	293.1	268.0	121.0	47.5	1,329.4
Consultant Support Costs	79.5	94.0	94.0	86.0	86.0	24.5	464.0
Subtotal	827.5	838.1	796.5	647.6	350.1	220.9	3,680.7
Subtotal	908.5	1,312.3	1,432.6	1,262.3	593.1	220.9	5,729.7
F. Training							
National Training	78.0	-	-	-	-	-	78.0
Provincial Training	50.0	-	-	-	-	-	50.0
District Training	65.0	-	25.0	-	-	-	90.0
Subtotal	193.0	-	25.0	-	-	-	218.0
G. Studies	-	100.0	100.0	100.0	100.0	-	400.0
H. Implementation and Supervision							
Government Staff	219.0	292.0	292.0	292.0	292.0	73.0	1,460.0
Incremental Staff	282.0	376.0	376.0	376.0	376.0	94.0	1,880.0
Office Operation	67.2	149.8	149.8	149.8	149.8	17.4	683.8
Vehicle and MC Operation	14.6	19.5	19.5	19.5	19.5	4.9	97.5
Subtotal	582.8	837.3	837.3	837.3	837.3	189.3	4,121.3
I. Unallocated	75.0	100.0	100.0	100.0	100.0	25.0	500.0
Total BASELINE COSTS	3,600.6	6,473.9	9,658.3	9,463.0	7,215.7	435.1	36,846.6
Physical Contingencies	81.5	116.8	91.1	80.0	46.6	13.3	429.2
Price Contingencies	18.4	45.3	62.8	79.7	82.3	35.7	324.2
Total PROJECT COSTS	3,700.5	6,636.0	9,812.2	9,622.7	7,344.5	484.1	37,600.0
Taxes ^a	445.8	532.6	885.0	870.5	648.1	27.8	3,409.8
Foreign Exchange	1,311.5	1,955.2	3,331.5	3,214.0	2,395.8	175.3	12,383.3

^a All taxes and duties with respect to ADB-financed expenditure items will be financed by the grant.

Source: Asian Development Bank estimates

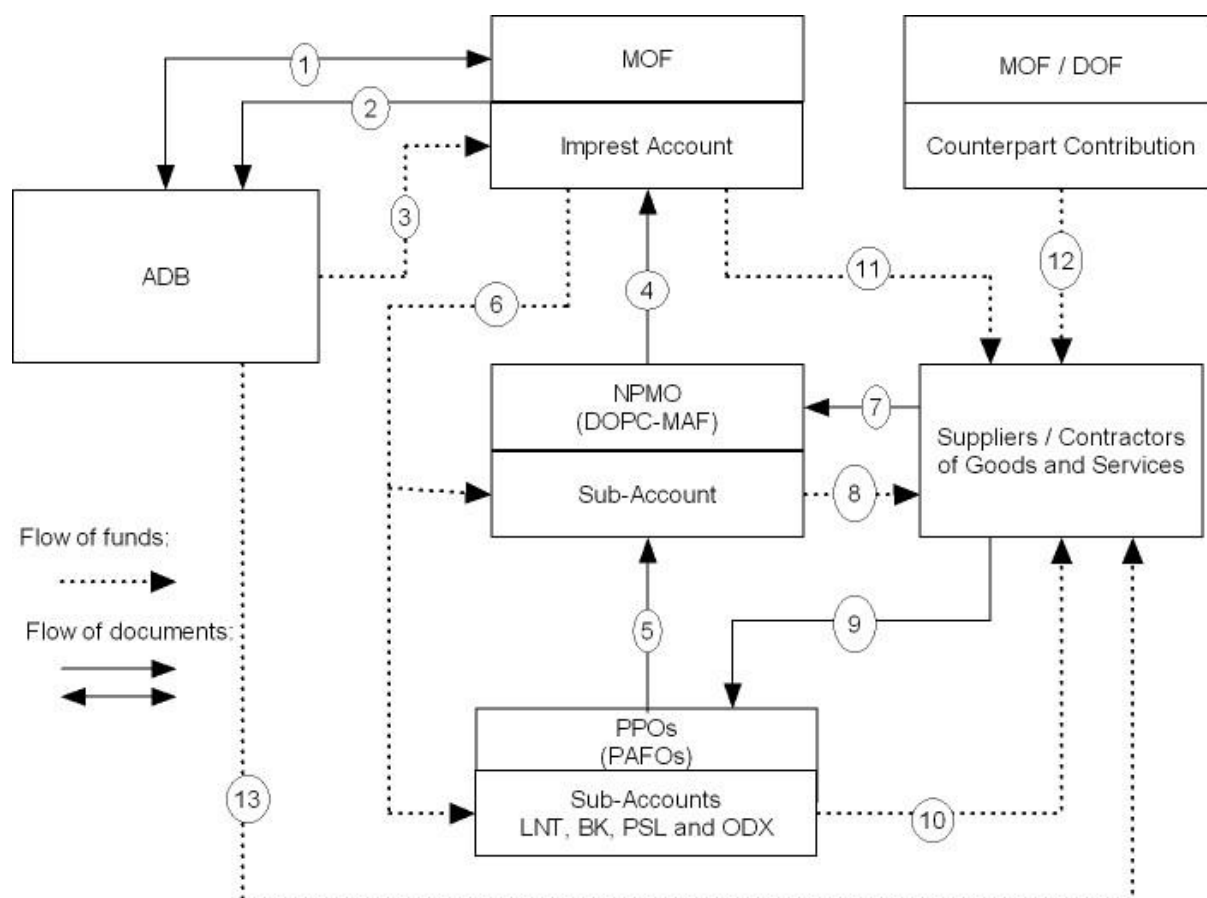
VI. Contract Awards and Disbursement S-curve



Source: Asian Development Bank estimates.

Year	Contract Awards (in USD million)					Disbursement (in USD million)				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
2017	-	-	4.15	3.51	7.66	-	-	0.13	1.61	1.74
2018	0.92	0.30	0.61	7.64	9.46	1.14	1.58	1.75	0.81	5.27
2019	0.82	0.26	0.61	7.24	8.92	2.06	3.61	3.71	0.61	9.99
2020	0.80	0.32	0.32	6.31	7.75	2.12	3.45	3.56	0.59	9.72
2021	0.32	0.32	0.25	0.29	1.18	1.83	2.86	2.95	0.52	8.16
2022	0.32	0.32	-	-	0.63	0.39	0.33	-	-	0.72
Total Contract Awards					35.60	Total Disbursements				35.60

VII. Funds Flow Diagram



ADB = Asian Development Bank, BK = Bokeo, DOF = Provincial Department of Finance, GOL = Government of Lao PDR; LNT = Louang-Namtha, MOF = Ministry of Finance, NPMO = national project management office; ODX – Oudomxai, PPO = provincial project office, and PSL = Phongsali.
Source: Asian Development Bank and Executing Agency/GOL.

51. There are no significant changes in the funds flow arrangement for the additional grant financing, which are presented graphically above, from the practices adopted under the current project. However, the funds for the AF shall be kept in separate imprest and sub-accounts to those for the current project.¹¹ NPMO and PPOs shall maintain separate accounting systems, records and reports for the AF. The funds flow arrangements for the AF are summarized below:

- (i) GOL through the MOF signs the grant agreement with ADB.
- (ii) MOF submits to ADB withdrawal applications for imprest account advances, replenishments, statements of expenditures and liquidation of imprest accounts.
- (iii) ADB deposits the advance and the replenishments to the imprest account.
- (iv) NPMO submits to MOF for review and approval requests for sub-account advance, replenishments and liquidation of sub-accounts; endorses to MOF

¹¹ ADB now uses the terms “imprest account” and sub-account” in place of first and second generation imprest accounts.

- claims of suppliers and contractors for payment to be made from the imprest account.
- (v) PPO submits to NPMO, for review and approval, requests for sub-account advance, replenishments and liquidation of sub-accounts; endorses to NPMO claims of suppliers and contractors for payment to be made from the imprest account.
- (vi) MOF deposits advance and replenishments to the sub-accounts.
- (vii) Suppliers and contractors submit payment claims to NPMO.
- (viii) NPMO processes and pays claims for NPMO operating costs eligible for ADB financing from the sub-account.
- (ix) Suppliers and contractors submit payment claims to PPO.
- (x) PPO processes and pays claims for PPO operating costs eligible for ADB financing from the sub-accounts.
- (xi) MOF pays suppliers and contractors for claims eligible for ADB financing from the imprest account.
- (xii) MOF and DOF pay suppliers and contractors for claims that are funded from government counterpart contribution.
- (xiii) ADB directly pays suppliers and contractors for claims eligible for ADB financing after receipt of MOF requests for direct payment and required supporting documents.

V. FINANCIAL MANAGEMENT

A. Financial Management Assessment

52. The financial management assessment (FMA) was conducted in accordance with ADB guidelines. The FMA covers the Ministry of Agriculture and Forestry (MAF) as the executing agency (EA) and the provincial agriculture and forestry office (PAFO) of participating provinces as the implementing agencies (IA). The objective of the assessment was to determine whether the entities implementing the project have acceptable financial management arrangements that can comply with ADB accounting and reporting requirements. The previous FMA for MAF and participating PAFOs was completed in preparation of L3198-LAO: Northern Smallholder Livestock Commercialization Project (2014).

53. According to the latest available assessments by ADB and World Bank, the overall fiduciary risk in the Lao PDR is considered high. This is due to insufficient transparency over the use of public finances and limited public access to government budget and financial information. In addition there is generally low awareness of modern practices of internal controls in the public sector. The financial management capacity of government staff at provincial and district levels is very weak and needs to be strengthened. The external audit oversight function by the State Audit Organization (SAO) also needs improvement. There is a lack of well-trained and qualified local accountants and auditors in the country. There is reportedly a widely held public perception that the government is not committed to implementing reforms, despite recent passage of laws and decrees aimed at strengthening public financial management. The level of corruption is perceived to be high according to investigations and survey results by international civil society and research organizations.

54. At the country level, deficiencies in financial management systems include: (i) weak public financial management (PFM) systems; (ii) a shortage of personnel with adequate financial management skills; and (iii) the failure of procuring entities to follow PFM rules. At the project-specific level, potential risks include: (i) possible inability of government to meet

counterpart funding obligations due to budgetary constraints; (ii) limited procurement capacity within the EA and IAs; (iii) potential for corruption as a result of weak procurement oversight; (iv) funds may not reach intended beneficiaries in a timely manner; (v) project accounting and financial reporting will not meet ADB requirements; (vi) delays in the submission of externally audited project accounts due to the heavy SAO workload; (vi) annual audits will not meet ADB requirements; and (vii) inadequate safeguard of accounting data. Without risk mitigation measures, the overall risk level for the project is assessed as high.

55. The MAF and participating PAFOs have extensive experience in the implementation of externally funded projects, including those funded by ADB. Mitigating measures to address the shortcomings include: (i) existing national project management office (NPMO), provincial project offices (PPO) and their staff under the current project¹² will be used in the overall project; (existing staff are experienced and familiar with ADB accounting, financial reporting and procurement requirements); (ii) existing project oversight bodies (i.e. the national and provincial project steering committees) will be used; (iii) ADB bidding, procurement and disbursement guidelines will be used; (iv) counterpart funding will involve mainly in-kind support for government counterpart salaries and office space, land acquisition and resettlement costs; taxes and duties will be financed by the grant; (v) training and on-the-job mentoring of new accounts staff on ADB project accounting and financial reporting by experienced accounts staff and financial management consultants; (vi) funds flow arrangements similar to the current project, which have been tested and proven successful, will be used; (vii) accounting policies consistent with International Accounting Standards and International Financial Reporting Standards will be used; (viii) NPMO will recruit an external auditor whose qualifications, experience and TOR are acceptable to ADB; annual external audit will be in accordance with international auditing standards; and (ix) regular backups of all financial and accounting data and appropriate security measures over backed-up data shall be in place. With risk mitigation measures, the risk level for the overall project is assessed as low.

B. Disbursement

56. The grant proceeds will be disbursed in accordance with ADB's *Loan Disbursement Handbook* (2015, as amended from time to time), and detailed arrangements agreed upon between the government and ADB. Online training for project staff on disbursement policies and procedures is available at: http://wpqr4.adb.org/disbursement_elearning. Project staff are encouraged to avail of this training to help ensure efficient disbursement and fiduciary control.

57. Disbursements will be made using the direct payment procedure, reimbursement and imprest fund procedure. Disbursements for the grant shall be managed through separate imprest and sub-accounts which are separate from that of the current project's accounts.

58. **Imprest Fund Procedure.** To ensure the timely release of grant proceeds and to expedite project implementation, the government will, immediately upon grant effectiveness, open and maintain an imprest account at the Bank of Lao. The MOF will be responsible for establishing, managing, replenishing, and liquidating the imprest account. The imprest account will be in US dollar. The imprest account will be used exclusively for ADB's share of eligible expenditures. This will be used to meet national level project costs including consulting services contracts and PRI subproject works. The total outstanding advance to the imprest account should not exceed the estimate of ADB's share of expenditures to be paid through the imprest

¹² The current project was awarded by ADB in collaboration with the Ministry of Planning and Investment of Lao PDR for being ranked number one under the category "2014 Good Practice in Project Implementation" among all other ADB funded projects in Lao.

account for the forthcoming six months. The imprest account will be replenished in accordance with standard procedures outlined in the ADB's Loan Disbursement Handbook (2015, as amended from time to time). The MOF, who established the imprest account in its name, is accountable and responsible for proper use of advances to the imprest account, including advances to the sub-accounts.

59. The request for the initial and additional advances to the imprest account should be accompanied by an estimate of expenditure sheet¹³ setting out the estimated expenditures for the forthcoming six months of project implementation. Supporting documents for every liquidation and replenishment of the imprest account, are (a) Statement of Account (Bank Statement) where the imprest account is maintained, and (b) the Imprest Account Reconciliation Statement (IARS) reconciling the above mentioned bank statement against the EA's records.¹⁴

60. Funds in the imprest account will be used to establish advances in five sub-accounts. Sub-accounts will be established in a commercial bank acceptable to ADB. These will be opened and managed by NPMO and the four PPOs in the provinces of Bokeo, Luang Namtha, Oudomxai and Phongsali. The sub-accounts are to be used exclusively for ADB's share of eligible expenditures. Sub-accounts are intended to provide cash resources for the operations of the NPMO and PPOs, and will be liquidated and replenished with the submission of sufficient documents as outlined in ADB's Loan Disbursement Handbook.

61. **Statement of Expenditures Procedure (SOE).**¹⁵ The SOE procedure may be used for reimbursement of eligible expenses or liquidation/replenishment of advances to the imprest account. All supporting documents and records should be maintained and made readily available for inspection by ADB's disbursement and review missions, upon ADB's request for submission of supporting documents on a sampling basis, and for independent audit. NPMO will be responsible for ensuring that SOEs are operated in accordance with ADB's requirement.

62. Before the submission of the first withdrawal application, the MOF should submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of the borrower, together with the authenticated specimen signatures of each authorized person. The minimum value per withdrawal application is US\$100,000 equivalent; individual payments below this amount should be paid (i) by the EA/IA and subsequently claimed to ADB through reimbursement, or (ii) through the imprest fund procedure, unless otherwise accepted by ADB.

C. Accounting

63. The NPMO and PPOs will maintain separate project accounts and records by funding source for all expenditures incurred on the project. The NPMO will prepare project financial statements in accordance with government accounting laws and regulations which are consistent with international accounting principles and practices.

¹³ Available in Appendix 10B of the *Loan Disbursement Handbook* found in <http://www.adb.org/documents/loan-disbursement-handbook>

¹⁴ Follow the format provided in Appendix 10C of the *Loan Disbursement Handbook*.

¹⁵ SOE form is available in Appendix 9B of ADB's Loan Disbursement Handbook (2015, as amended from time to time).

D. Auditing and Public Disclosure

64. The NPMO will cause the detailed consolidated project accounts to be audited in accordance with International Standards on Auditing by an independent auditor acceptable to ADB. The audited accounts, together with the auditor's opinion, will be submitted in the English language to ADB within 6 months of the end of the fiscal year by the executing agency. The annual audit report will include a management letter and auditor's opinions, which cover (i) whether the project financial statements present an accurate and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting standards; (ii) whether the proceeds of the grant were used only for the purpose(s) of the project; and (iii) whether the borrower or executing agency was in compliance with the financial covenants contained in the grant agreement (where applicable).

65. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal program supervision, and followed up regularly with all concerned, including the external auditor.

66. The government and the NPMO have been made aware of ADB's policy on delayed submission, and the requirements for satisfactory and acceptable quality of the audited accounts (covering failure of submitting audited accounts and financial statements by the due dates). ADB reserves the right to require a change in the auditor (in a manner consistent with the constitution of the borrower), or for additional support to be provided to the auditor, if the audits required are not conducted in a manner satisfactory to ADB, or if the audits are substantially delayed. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures.

67. Public disclosure of the audited project financial statements, including the auditor's opinion on the project financial statements, will be guided by ADB's Public Communications Policy 2011.¹⁶ After the review, ADB will disclose the audited project financial statements and the opinion of the auditors on the project financial statements no later than 14 days of ADB's confirmation of their acceptability by posting them on ADB's website. The management letter, additional auditor's opinions, and audited entity financial statements will not be disclosed.¹⁷

¹⁶ Public Communications Policy: <http://www.adb.org/documents/pcp-2011?ref=site/disclosure/publications>

¹⁷ This type of information would generally fall under public communications policy exceptions to disclosure. ADB. 2011. *Public Communications Policy*. Paragraph 97(iv) and/or 97(v).

VI. PROCUREMENT AND CONSULTING SERVICES

A. Advance Contracting

68. All advance contracting will be undertaken in conformity with ADB's Procurement Guidelines (2015, as amended from time to time) and ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). Any issuance of invitation to bid under advance contracting will be subject to ADB approval. The borrower, NPMO and PPOs have been advised that approval of advance contracting does not commit ADB to finance the scope of works under the overall project.

69. The overall project will continue to utilize the institutional and procurement arrangements already established under the current project, including the provision of key central, provincial, and district staff.

70. The project management has been supported by the grant implementation consultants (GIC) through a firm recruited under the current project. The GIC are judged to have provided highly satisfactory services by the EA. The services needed to support the additional financing represent a natural continuation of the previous work carried out by the firm and the continuity of consulting services is in the overall interest of project implementation and enhances economy and efficiency. Therefore the services of the GIC will be extended to cover the new project scope, through a contract variation¹⁸ The NPMO will conduct advance action for the negotiation of a contract variation with GIC. It is anticipated that the contract variation will be ready for signing immediately upon effectiveness of the additional financing.

71. The EA conducted advance action for the recruitment of the engineering consulting firm to conduct detailed design work, bidding and bid evaluation for the civil works for the two representative PRI subprojects. Contract to the successful engineering design firm was awarded in September 2016. .

B. Procurement of Goods, Works and Consulting Services

72. All procurement of goods and works will be undertaken in accordance with ADB's Procurement Guidelines (2015, as amended from time to time).

73. Civil work packages will comprise the rehabilitation and improvement of PRI located in the provinces of Bokeo, Luang-Namtha, Oudomxai and Phongsali. Packages for works valued at less than \$3.0 million but more than \$100,000 or equivalent shall be procured following NCB procedures described in Annex C. For works below \$100,000 equivalent, shopping procedures may be followed. Packages for goods costing less than \$1,000,000 equivalent but more than \$100,000 shall be procured through NCB procedures. Smaller packages for goods valued at less than \$100,000 may be procured using shopping procedures. Smaller packages for goods valued at less than \$10,000 may be procured using direct contracting procedures.

74. Before the start of any procurement, ADB and the government will review the public procurement laws of the central and state governments to ensure consistency with ADB's Procurement Guidelines.

¹⁸ GIC terms of reference are presented in Annex D.

75. The procurement capacity assessment (PCA) concludes that there is a low risk rating for the overall project. However, the PCA notes that the contractual arrangement for the civil works under the current project (Employer-Engineer-Contractor) leaves GIC with little scope to ensure quality control. The PCA recommends that provision will be made in the civil works contract for GIC to serve as the employer's agent in overseeing civil works construction and providing quality control.

C. Procurement Plan

76. The procurement plan has been prepared in accordance with ADB's generic procurement template, and tailored to suit the country specific needs as assessed and presented in the procurement capacity assessment. The project shall retain competent staff for all procurement and recruitment functions and shall consult with ADB on any staff changes in this regard. A complete detailed and an 18-month procurement plan indicating threshold and review procedures, goods, works, and consulting service contract packages and national competitive bidding guidelines is in Annex C.

D. Consultant's Terms of Reference

77. All consultants/organizations will be recruited according to ADB's Guidelines on the Use of Consultants (2013, as amended from time to time).¹⁹ The project will require a number of consulting services to assist NPMO, PPOs and DCOs, as follows:

- **GIC** will have a total input of 414 person-months, comprising 81 person-months of international expertise and 333 person-months of national expertise. The following criteria will be observed in preparing the contract variation: (i) There will be minimal changes to the team composition; (ii) The rates to be used in the VO will be based on the original GIC contract rates; and (iii) No further extension to the new contract will be considered.
- **Engineering Consulting Firm (ECF)** will be recruited through consultants' qualification selection (CQS) procedures to assist with the detailed design, bidding and contract award, contract administration and construction supervision. It is anticipated that there will be nine (9) consulting packages covering the additional 22 PRI subprojects, with a total input of around 300 person-months of national expertise.
- **Social impact assessment consultants** will be recruited through CQS procedures to assist with the preparation of the feasibility studies (FS). It is anticipated that three (3) consulting packages (one package for each of the Phase II, Phase III, Phase IV) covering the additional 20 PRI subprojects will be recruited with a total input of around 75 person-months of national expertise.²⁰
- An **external safeguards monitor** will also be recruited through CQS procedures to provide an independent and overall assessment of safeguard activities under the project. It is anticipated that there will be one package covering all 22 PRI subprojects, with a total input of around 40 person months of national expertise.

¹⁹ Checklists for actions required to contract consultants by method available in e-Handbook on Project Implementation at: <http://www.adb.org/documents/handbooks/project-implementation/>

²⁰ Social impact assessments for the two sample subprojects have already been completed under the PPTA (TA8882-LAO: Northern Rural Infrastructure Development Sector Project – Due Diligence of Additional Financing).

- **Financial Auditor.** The current project finances have been audited by the State Audit Organization (SAO). The cost of using the SAO is covered by the project operating budget. It is expected that this arrangement will continue into overall project. However, in the event the SAO is not available to provide this service a provision in the procurement plan has been made to recruit a qualified audit firm using one CQS package with an estimated input of 15 person months of national expertise.
- Provision has also been made under the additional financing for the conduct of an **irrigation subsector review**. An international firm will be recruited in accordance with the fixed budget selection procedures as set out in ADB's Guidelines on the Use of Consultants. A total of around 14 person-months input will be required over a period of around six (6) months.

78. A complete terms of reference for all consulting services is in Annex D.

VII. SAFEGUARDS

79. The primary focus of the overall project is to improve agriculture productivity and forge linkages with local and international markets for raw and processed agricultural goods and capabilities to sustain it. This will be achieved mainly through improvements to existing PRI and by means of associated initiatives that will facilitate improved productivity and benefit to smallholders support to community based organizations such as producer groups and WUGs. Potential PRI subprojects have been pre-screened to ensure conformity with project criteria which include strict adherence to safeguard regulations of ADB and the government, including environmental and social impact on the population in general and on vulnerable groups in particular. Criteria for selection of PRI subprojects virtually eliminated PRI subprojects with potential significant impact on environment, and resettlement and land compensation matters. Consideration was also given during the PRI subproject selection process to ensure that women and vulnerable groups as well as ethnic minorities would derive significant benefits from the selected PRI subprojects and that any potential negative impact could be mitigated.

A. Resettlement

80. Overall, little impact is anticipated from resettlement since PRI subprojects comprise rehabilitation of existing infrastructure, involving existing irrigation systems that do not require significant land acquisition. Furthermore, PRI subprojects have been pre-screened during the preparation stage to ensure they do not entail significant resettlement. Only category B and C PRI subprojects will be eligible for financing under the overall project.

81. Most of the civil works will involve rehabilitation of existing irrigation facilities and construction work will be carried out primarily within the existing rights-of-way. The most likely resettlement issue will come from relocation of delivery canals to improve water utilization efficiency. In such cases, it is likely that alternative land can be provided in a suitable location to the affected persons within the command area. There is provision in the resettlement framework to accept and formalize voluntary land donations for scheme improvements. There will also be some temporary loss of production during the dry season requiring compensation but as the purpose of most small scale irrigation schemes is primarily to complement wet season water supplies, the impact during the dry season when works will be undertaken will be minimal. Furthermore, the participation of local beneficiaries during the detailed design phase will minimize the impact from both lost production and land replacement.

82. There may be a few times where a pre-screened PRI subproject is found during the FS to present more significant resettlement issues which cannot be mitigated, the PRI subproject will be replaced by a new PRI which meets the eligibility criteria. In such a case, if a new PRI subproject is proposed which was not included in the list of eligible PRI subprojects, pre-screening will be undertaken by a consultant acceptable to ADB to ensure its conformity with PRI subproject eligibility criteria. Any voluntary land donation or minor compensation that may be needed will be provided in accordance with resettlement plans prepared for each PRI subproject based upon the guidelines outlined in the resettlement framework agreed with the government (linked document 12). Qualified safeguard officers will be appointed in each PPO to ensure conformity with the resettlement plans prepared for each PRI subproject (as appropriate). They will be supported by independent safeguard monitoring entities that will be engaged by the NPMO.

B. Environmental Impact

83. An environment assessment and review framework has been agreed with the government (linked document 11) which has been used to prepare initial environmental examination and environmental management plan for the two RSPs. Based on these samples, and given the extent

of PRI subproject pre-screening that has taken place during preparation, there is little likelihood of having significant negative environmental impacts that cannot be mitigated through the implementation of EMPs. For irrigation rehabilitation and development, FS will assess permissible quantities of water offtake during the dry season to allow sufficient flows to maintain the riparian ecosystem and ensure there are adequate resources for downstream users. The introduction of land zoning in catchment areas of reservoirs will minimize inappropriate land use activities within the catchment and reduce the risk of siltation of streams while assuring dry season flows. Environment “category A” PRI subprojects will be ineligible and will not be financed under the overall project. Any PRI subproject which may be reclassified under category A for environment during the FS will be removed from the list of eligible PRI subprojects and will be replaced by a new PRI subproject which meets the eligibility criteria. In such a case, similar to resettlement, if a new PRI subproject is proposed which was not included in the list of eligible PRI subprojects, pre-screening will be undertaken by a consultant acceptable to ADB to ensure its conformity with PRI subproject eligibility criteria. Support in the preparation of consistent and well thought out environmental assessments and management plan preparation for each PRI subproject will be provided at national and provincial levels.

C. Ethnic Groups

84. The ethnic group development framework has been developed for the overall project (linked document 13) and sets out the requirements for pre-screening of PRI subprojects and for processes to be followed in the preparation of each of the PRI subprojects. The analysis found that ethnic groups are the majority population in participating provinces and that certain groups have significantly higher levels of poverty and associated disadvantages. The main concerns are communication difficulties, particularly for women, together with opportunity to access project benefits. Mitigation measures include effective consultation requirements and positive discrimination for employment during the construction phase; membership of committees; and capacity building for disadvantaged and vulnerable ethnic groups. All monitoring and evaluation data will be disaggregated for the four major ethno-linguistic groups.

85. The overall project will focus on rehabilitation of existing irrigation systems and roads and therefore will not be involved in sequestration of any land that could be considered ‘ancestral domains’. Any lands that are required will be for infrastructure works and as these are rehabilitative works areas requirement will be minimal and will be dealt with through routine resettlement procedures. Pre-screening procedures for each PRI subproject have eliminated those PRI subprojects that will result in negative impacts to ethnic groups.

86. The following table sets out the specific elements to be addressed in each ethnic group development plan (EGDP) and it should be noted that many of these are similar to those in the gender action plan (GAP) to support a combined GAP/EGDP, where appropriate.

Table 6: Ethnic Group Development Plan

Project Component	Ethnic Group Development Plan Framework Element
1. Productivity enhancing rural infrastructure constructed and/or rehabilitated.	<p>Documented evidence of consultation with ethnic groups (women and men) demonstrating their support prior to PRI subproject approval.</p> <p>Selection criteria for PRI subprojects should ensure the use of local labor and avoidance of construction camps.</p> <p>Local contractors will preferentially employ women and men from poor ethnic groups households in construction activities, to the extent that they are willing and able to take on paid labor.</p> <p>Local contractors will not employ child labor.</p> <p>Ensure appropriate prevention programs are implemented for HIV and human trafficking in all road rehabilitation PRI subprojects.</p>
2. Productivity and impact enhancing initiatives adopted.	<p>Representation of ethnic groups in WUGs.</p> <p>Representation of ethnic groups on all PRI subproject management committees (marketing initiatives, producer groups and etc.). Capacity building for ethnic groups to enable participation in PRI subproject and community decision-making delivered in local language and using appropriate methodology (i.e. participation and negotiation training, marketing skills and numeracy training).</p> <p>Representation of ethnic groups in project study tours. Extension services designed for and delivered to ethnic groups.</p>
3. Capacities of national, provincial and district agencies strengthened to enable a sector development approach.	<p>Safeguard (EGDP) training for implementing agencies at national, provincial and district levels (i.e. NPMO, PPOs, DCOs and other stakeholders).</p> <p>Ongoing training and mentoring by International and National Specialists will be provided to national and provincial staff to enable effective preparation and monitoring of individual EGDs for each PRI subproject.</p> <p>Assistance (budgets) provided for capacity building of the Village Mediation Committees where these have not had the recent round of training.</p> <p>Assistance (budgets) provided for capacity building of village and district level committees of the Lao Front for National Construction where this relates to promoting and meeting the needs of ethnic groups in PRI subproject areas.</p>
4. Efficient and effective delivery of subprojects and Project management.	<p>Safeguard (Ethnic Groups) specialists included in national and provincial PRI subproject implementation teams.</p> <p>Social Impact Analysis and an EGD will be prepared for each PRI subproject.</p> <p>All monitoring and evaluation data disaggregated by ethnic groupings (four ethno- linguistic groupings).</p> <p>NPMO and PPOs responsible for monitoring and reporting of EGD performance indicators, including ethnic participation, training and employment targets.</p> <p>EGDP performance included in the mid-term review.</p>

VIII. GENDER AND SOCIAL DIMENSIONS

87. The Eight National Socio-Economic Development Plan has a focus on inclusive growth in rural areas, supporting infrastructure and improved natural resource management. This strategy is reflected in the current Asian Development Bank (ADB) Country Partnership Strategy (CPS) 2012-2016. As described in the summary poverty reduction and social strategy (SPRSS, linked document 9), the proposed additional financing supports increased productivity and commercialization in agriculture by addressing recognized constraints, targeting improvements that have a proven positive impact on productivity and addressing the disparity between rural and urban poverty. It will contribute to poverty reduction through geographic and sector targeting. Bokeo, Luang Namtha, Oudomxai, and Phongsali have prevalent rural poverty but also the potential to increase surplus production. They are strategically located for trade with neighboring countries that have current unmet demand for agricultural produce.

88. The overall project aims to improve agriculture productivity in four northern provinces through provision of infrastructure and associated initiatives. The overall project is classified as 'Effective Gender Mainstreaming' under the ADB guidelines of March 2010.

89. The overall project can provide women in target communities with improved infrastructure that will increase productivity and incomes, improve mobility, empower women by creating opportunities to participate in decision-making, lessen women's work burdens and save time. To ensure this result, appropriate actions need to be undertaken but gender mainstreaming knowledge and skills are lacking across implementing agencies.

90. The principles of GAP (linked document 10) are: (i) equality of project benefits and opportunity sharing between men and women; (ii) systematic approach to reduce gender inequalities in the overall project areas; (iii) targeted approach for women of ethnic minorities; (iv) collection of gender disaggregated data including benefit monitoring and evaluation; and (v) increased representation of women in decision-making bodies at all levels. The gender-inclusive design elements are based on the principles and are in response to constraints faced by women as demonstrated in the social and gender analysis. Where appropriate, MAF gender targets are taken from the MAF Strategy to 2020 integrated (gender) strategy. The overview of the GAP is as follows:

Project Outputs	Plan
1. Production and productivity enhancing rural infrastructure constructed and/or rehabilitated	<ul style="list-style-type: none"> • Documented evidence of consultation with local women and women's groups (including women from ethnic groups) prior to subproject approval. • Selection criteria for subproject contractors have to ensure the use of local labor and will not employ child labor. • Before construction the project informs men and women of job opportunities. • Equal opportunity to access employment with equal pay for equal type of work. • Safe working conditions for both men and women workers. • Ensure appropriate prevention programs are implemented for HIV and human trafficking in all construction areas. • Provide for construction of essential sanitation.
2. Productivity and impact enhancing initiatives adopted.	<ul style="list-style-type: none"> • 30% participation of women in water user groups' management. • 30% participation of women on all subproject management committees (marketing initiatives, producer groups, etc.). • At least two trainings per subproject for women's meaningful participation in

Project Outputs	Plan
	<p>subproject and community decision-making (i.e. trading skills, numeracy etc.)</p> <ul style="list-style-type: none"> • Conduct gender awareness training for each sub-project including (i) project gender requirement/targets (ii) awareness raising on land titling,(iii) impact of agro-chemicals, HIV and human trafficking (iv) division of labor (v) access to and control resources, decision making (vi) at least 50% female participants. • Female focused extension services designed for and delivered by women. • 30% participation of women in project study tours. • 30% participation of women in skills training. • Ensure land titling certificates are in both spouses' names.
3. Capacities of national, provincial and district agencies strengthened to enable a sector development approach	<ul style="list-style-type: none"> • Village Lao Women's Union consulted in the design of all project infrastructure improvements. • Gender awareness training for NPMO, PPO and DCOs at project commencement including (i) project gender requirement/targets and monitoring and reporting of GAP. • 50% of trainees are women.
4. Efficient and effective delivery of subprojects and Project management.	<ul style="list-style-type: none"> • Include national gender specialist and assign project gender focal point in the provincial subproject implementation level. • NPMO and PPOs responsible for monitoring and reporting of GAP performance indicators, including women's participation, training and employment targets. • 20% of staff in NPMO and PPO are women at each level (senior management, technical and administrative / support staff). • All data will be disaggregated by sex and ethnic. • GAP performance report to ADB with attaches GAP monitoring table in the quarterly reports.

IX. PERFORMANCE MONITORING, EVALUATION, REPORTING AND COMMUNICATION

A. Revised Design and Monitoring Framework

Impact the Project is Aligned with: Current project: Improved rural household incomes in the four northern provinces of Bokeo, Louang-Namtha, Oudomxai, and Phongsali Overall project: Unchanged and is aligned with Ministry of Agriculture and Forestry's (MAF) Agricultural Development Strategy to 2025 and Vision to the year 2030			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
Outcome Current project Increased agricultural productivity in the four northern provinces of Bokeo, Louang-Namtha, Oudomxai, and Phongsali Overall project Unchanged	Current project Agriculture productivity in rice equivalent increased from 3 tons/ha in 2010 to 5 tons/ha by 2017 Overall project Agriculture productivity in rice equivalent increased from 3 tons/ha in 2010 to 5 tons/ha by 2022	Key commercial crop production statistical reports by provincial and district agriculture and forestry offices	Climate change impacts adversely affect crop production and commercialization.
Outputs Output 1 Current project Production and productivity-enhancing rural infrastructure constructed and/or rehabilitated Overall project Unchanged	1a. Current project An estimated 2,900 ha of command area served by rehabilitated gravity irrigation structures by 2017 Overall project An estimated 12,100 ha of command area served by rehabilitated gravity irrigation structures by 2021 1b. Current project 155 kilometers of rural access roads rehabilitated by 2017 Overall project 225 kilometers of rural access roads rehabilitated by 2021 1c. Current project	1a–c. NPMO and PPO quarterly progress and monitoring reports; NPMO and PPO consolidated subproject completion reports	1a–1b. Water user groups fail to provide operation and maintenance to the improved infrastructure.

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
<p>Output 2 Current project Productivity and impact-enhancing initiatives adopted</p> <p>Overall project Unchanged</p>	<p>Women have equal opportunity to access employment for construction activities by 2017, with equal pay for equal work</p> <p>Overall project Women have equal opportunity to access employment for construction activities through 2021, with equal pay for equal work</p> <p>2a. Current project 25 producer and water user groups formed by February 2017, with women comprising 30% of their members</p> <p>Overall project 48 water user groups and farm producer groups operating by December 2021, with women comprising 30% of their members</p> <p>2b. Current project 25 producer groups supply contracts ratified by district agriculture and forestry offices by February 2017 to supply private processors for value-addition through processing</p> <p>Overall project 48 water farm producer groups supply contracts ratified by district agriculture and forestry offices by December 2021 to supply private processors for value addition through processing</p> <p>2c. Current project 20 catchment management plans with associated land rezoning implemented by 2017</p> <p>Overall project</p>	<p>2a. NPMO and PPO quarterly progress and monitoring reports</p> <p>2b. Accomplishment reports of district registrar of producer cooperatives involved in the marketing of agricultural produce</p> <p>2c. District governor approvals of land-use and zoning plans; NPMO and PPO training completion reports</p>	<p>2b. Commodity price fluctuations and uncertainty reduce interest in contract farming.</p> <p>2c. Corrupt practices emerge in the land tenure process.</p>

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
Output 3 Current project Capacities of national, provincial, and district agencies strengthened to enable a sector development approach Overall project Unchanged	35 watershed management plans with associated land rezoning implemented; cadastral maps for 48 subprojects irrigation command areas and at least 5,000 water user group members obtain land ownership certificates by June 2022		
	2d. Current project Extension services designed for and delivered to women, with 30% of extension training for women, by 2016 Overall project Extension services designed for and delivered to women, with 30% of extension training for women, by December 2021	2d. NPMO and PPO quarterly progress and monitoring reports	
	3a. Current project 33 training courses conducted, with women comprising at least 50% of participants, by December 2014 Overall project 43 training courses conducted, with women comprising at least 50% of participants, by December 2021	3a–b. NPMO and PPO quarterly progress and monitoring reports	
	3b. Current project Monitoring and evaluation section established in the Department of Planning and Cooperation, with a staff of at least 10 people, by December 2012 Overall project Irrigation subsector review completed by 2017		
	4a.	4a. Notice to proceed	4a. Shortage of

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
Current Project Project managed and subprojects delivered efficiently and effectively Overall project Unchanged	Current project 5 key implementation consultants mobilized within 3 months of grant effectiveness; project performance and monitoring system disaggregated by gender and ethnolinguistic group operational within 12 months of effectiveness Overall project All key implementation consultants mobilized before grant effectiveness 4b. Current project At least 20% of NPMO and PPO staff (excluding secretarial and administrative staff) are women Overall project Unchanged	from NPMO 4b. NPMO and PPO quarterly progress and monitoring reports; staff registry in NPMO and PPOs	people with the necessary finance and procurement skills leading to poor financial and procurement practices.

Key Activities with Milestones^a (for additional financing)

- 1. Production and productivity-enhancing rural infrastructure constructed and/or rehabilitated**
 - 1.1 For 2 representative subprojects, completed detailed designs by April 2017 and construction by June 2018 (overall project, phase 1) (PSD)
 - 1.2 For 7 subprojects, completed detailed designs by June 2018 and construction by July 2019 (overall project, phase 2) (PSD)
 - 1.3 For 7 subprojects, completed detailed designs by June 2019 and construction by July 2020 (overall project, phase 3) (PSD)
 - 1.4 For 6 subprojects, completed detailed designs by June 2020 and construction by July 2021 (overall project, phase 4) (PSD)
 - 1.5 22 subprojects completed and handed over to relevant authorities for operation by July 2022
- 2. Productivity and impact-enhancing initiatives adopted**
 - 2.1 48 water user groups and farm producer groups established and trained in villages benefiting from rehabilitated infrastructure (26 completed by March 2017 and 22 by September 2021) (PAR)
 - 2.2 Pro forma public–private partnership agreements and associated arrangements prepared by the end of 2020 (PSD)
 - 2.3 20 watershed management plans and rezoning implementation completed by March 2018 and 12 more completed by September 2021 (GCD)
 - 2.4 Cadastral maps for 48 subproject irrigation command areas completed by June 2021 (GCD)
 - 2.5 Land titling teams equipped and trained by September 2017 (GCD)
 - 2.6 5,000 water user group members obtain land ownership certificates by February 2022 (PSD)
 - 2.7 Ongoing implementation of gender action plan by December 2021 (GEM)
- 3. Capacities of national, provincial, and district agencies strengthened to enable a sector development approach**
 - 3.1 An additional 10 training courses and 500 people trained by September 2021 (GCD)
 - 3.2 Irrigation subsector review undertaken by the end of 2018 (KNS)

4. Project managed and subprojects delivered efficiently and effectively

- 4.1 Continue established project management, monitoring, and reporting procedures to June 2022
- 4.2 Oudomxai PPO staffed and strengthened to implement subprojects by September 2017 (GCD)
- 4.3 Contract variation for project implementation consulting services completed by March 2017
- 4.4 Detailed design and contract document for 2 representative subprojects prepared by April 2017
- 4.5 Overall project completion report prepared by June 2022

Inputs

Asian Development Bank: \$23.0 million grant (current), \$35.6 million (additional), \$58.6 million (overall)
 Government: \$1.2 million (current), \$2.0 million (additional), \$3.2 million (overall)
 Beneficiaries: \$0.5 million (current), \$0.0 (additional), \$0.5 million (overall)

Assumptions for Partner Financing

Current project

The estimated beneficiary contribution for productive rural infrastructure maintenance in-kind contribution was estimated to be worth \$0.5 million from 25 producer and water user groups.

Overall project

The estimated beneficiary contribution for productive rural infrastructure maintenance for additional financing is not included in Table 2 since it is an in-kind contribution, but is estimated to be worth an additional \$0.4 million, for a total of \$0.9 million for the overall project from 48 producer and water user groups.

ADB = Asian Development Bank, GCD = governance and capacity development, GEM = gender equity and mainstreaming, ha = hectare, KNS = knowledge solutions, NPMO = national project management office, PAR = partnerships, PPO = provincial project office, PSD = private sector development.

^a A detailed implementation schedule is in the project administration manual.

^b For the additional financing, the estimated beneficiary contribution for productive rural infrastructure maintenance is not included since it is in-kind contribution, but is estimated to be worth \$0.4 million.

Source: Asian Development Bank.

B. Monitoring

1. Project performance monitoring

91. A PBME system has been developed and implemented by NPMO and is operating satisfactorily. PBME collects information at PRI subproject level to identify the current socio-economic conditions of target beneficiaries and to assess the impact of the PRI subprojects. PBME is based on measurable inputs, outputs and outcomes collected during baseline surveys and throughout project implementation. This system will continue under the overall project.

2. Compliance monitoring

92. The government and MAF have agreed with ADB on certain covenants for the overall project, which are set forth in the grant agreement including the following:

- (i) Only PRI subprojects that have been pre-screened either during preparation or by an approved specialist and subsequently approved by ADB shall be financed by ADB funds;
- (ii) The government will ensure that adequate funds are allocated for the periodic maintenance of infrastructure developed under the project through provincial budgets to maintain the infrastructure in functional order; and

- (iii) The government will ensure that a grievance redress mechanism is established for affected people in the participating districts.

93. ADB will monitor compliance with all covenants throughout implementation via regular review missions, quarterly progress reports submitted by the NPMO, and review of project accounts and procurement procedures.

3. Safeguards monitoring

94. The project will support the recruitment of an external safeguards monitoring firm (could be from a domestic consulting company, university or institute) to ensure that all recommendations and mitigation measures under the EMPs, EGDs, and RPs of each PRI subproject are being implemented in accordance with the plans.

4. Gender and social dimensions monitoring

95. As with the current project, all data, in accordance with Prime Minister's Decree No.140/PM dated 20 August 2002 and guideline paper No. 018/PMO of 10 January 2005, will be disaggregated by sex and age, urban and rural women, and women of ethnic groups. Routine monitoring by the safeguard monitoring entity to be recruited under the overall project will focus on assessing progress and compliance with GAPs, identifying constraints and developing remedial actions to effectively address these. Monitoring results will be part of the semi-annual progress reports and assessment/evaluations of the GAP will be an essential element of all reviews.

C. Evaluation

96. ADB will conduct regular (at least twice per year) reviews throughout implementation of the overall project to assess implementation performance and achievement of outcomes and objectives, examine financial progress, and identify issues and constraints affecting the overall project and work out time-bound action plans for their resolution.

97. A midterm review will also be undertaken within 30 months from effectiveness of the additional financing. This review will include a comprehensive evaluation of project implementation arrangements, detailed evaluation of the scope and implementation process and progress of PRI subprojects, feedback from the PBME, performance of consultants, capacity building progress, and possible reallocation of grant proceeds. During this more significant review, the impact from the pro-poor initiatives linked to infrastructure development will be assessed as will the allocation by local administrations for the maintenance of the infrastructure developed under the overall project. Remedial action will be instituted as required.

98. Within 12 months of physical completion of the overall project, ADB will conduct a project completion mission to carry out a preliminary assessment of the success of the Overall Project to achieve its physical, and socio-economic developmental objectives, as well as to review compliance with ADB requirements and grant covenants.

D. Reporting

99. NPMO will provide ADB with (i) quarterly progress reports in a format consistent with ADB's project performance reporting system; (ii) consolidated annual reports including (a)

progress achieved by output as measured through the DMF indicator's performance targets, (b) key implementation issues and solutions; (c) updated procurement plan and (d) updated implementation plan for next 12 months; (iii) semi-annual Safeguards Monitoring Reports; and (iv) a project completion report within six months of physical completion of the project. To ensure PRI subprojects continue to be both viable and sustainable, project accounts and the executing agency audited financial statements, together with the associated auditor's report, should be adequately reviewed.

E. Stakeholder Communication Strategy

1. Consultation

100. The overall project is designed to improve the welfare of rural inhabitants in the four participating provinces of Bokeo, Louang-Namtha, Oudomxai and Phongsali through a series of investments in PRI aimed to improve agriculture productivity and market efficiency together with improved access to and use of materials, knowledge, production inputs and markets.

101. Project preparation has been conducted with stakeholder agencies in the Government of Lao PDR at national, provincial and district levels including MAF, MPI and MONRE. Meetings have also been held in the participating provinces with PAFO and DAFO officials, as well as WUGs focusing on irrigation/water management arrangements and issues. Requirements for ensuring appropriate levels of consultation for PRI subproject proposal preparation which were established for the current project have been reviewed and confirmed.

102. Initial PRI subproject preparation includes consultation requirements involving documented evidence of inclusive consultation with all communities in the PRI subproject catchment area and participant information on numbers of women and men by ethnic grouping. PRI subproject socio-economic/gender surveys that identify vulnerable groups to provide basis for specific consultation and participation mechanisms will be followed during implementation.

103. During implementation, the process of consultation will continue throughout the FS and detailed design phase of each PRI subproject to afford community groups the opportunity to voice their views on how the PRI subproject is to be designed, implemented and operated. In addition, associated initiatives will be built into the design of each PRI subproject to enhance the impact from and sustainability of investments in rural infrastructure. These associated initiatives will be identified in a participatory manner from a menu of options developed with the respective stakeholders and beneficiaries and will strengthen community-based organizations such as the WUGs, the women's unions, village mediation units, producers and marketing groups, and input supply groups.

2. Participation

104. It is anticipated that the community will be mobilized in a number of different ways during PRI subproject design, implementation and operation. During PRI subproject design and preparation stages, community participation will consist primarily of their contribution through the consultation process. During construction, there will be significant opportunities for active participation, particularly for the poor households who will benefit from the PRI subproject through provision of wage labor to the contractors. This will be encouraged through the bidding documents which will request the contractors to investigate this option, whenever possible. The community will also be required to participate in the O&M of the completed infrastructure whenever possible through provision of labor or in some cases funds.

3. Awareness

105. Information about the overall project and the PRI subprojects in particular, including the objectives, potential environmental impact, implementation arrangements, resettlement and compensation matters, gender issues, issues of concerns for ethnic groups will be provided to beneficiaries. Information will be provided through village meetings, pamphlets, and other announcements in both Lao language and the language(s) of the communities whenever appropriate. The community will be fully informed of issues such as their right to participate in the PRI subprojects and to be compensated for any loss of property including productive land and/or assets as well as gender equity and other relevant policies. Separate meetings and discussions will be arranged with the people who are directly affected by land acquisition and/or resettlement issues. The community and particularly the affected households will be provided with detailed guidance and procedures regarding resettlement and compensation.

106. A summary in the form of a consultation and communication plan is incorporated in the following table.

Consultation and Participation Plan

Stakeholder group	Objective of their involvement	Approach to Participation and Depth	Participation Methods		Timing	Cost estimate
	Why Included		Method	Who Responsible		
Farmer communities (WUGs), poor households and women	Direct beneficiaries of project, member of WUGs.	Partnership (high)	<ul style="list-style-type: none"> • Information: project orientation, commitment under PRI subproject, participation mechanisms, and entitlements for APs. Informed through meetings, information brochures. • Consultation: on willingness to commit/contribute to WUG, needs and impacts of PRI subproject. Consultation through surveys and village meetings, focus group discussions. • Decisions: on participation in farm planning. Communities determine participation with support from PAFO/DAFO; ensure they are inclusive and include representatives of disadvantaged subgroups • Decisions: on WUG priorities and level of community participation; choice of infrastructure. 	PAFO/DAFO	From start of FS to post implementation of systems	Included in cost estimate
Private Sector: Contract farming investors.	Direct beneficiaries of project	Partnership (high)	<ul style="list-style-type: none"> • Information: project orientation, commitment under PRI subproject, participation mechanisms. Informed through meetings, information brochures. • Consultation: consulted on needs and issues affecting business-related farming. 	PPSC, PIU, DIU	During FS Periodically during project implementation	Included in cost estimate

Stakeholder group	Objective of their involvement	Approach to Participation and Depth	Participation Methods		Timing	Cost estimate
	Why Included		Method	Who Responsible		
District, Provincial Government	Representatives of government are responsible for project implementation, and representing provincial and district	Collaboration (high)	<ul style="list-style-type: none"> • Approvals: review and approve safeguard documents • Project implementation: allocate staff to PIU/DIU to provide local inputs • Monitoring: oversee implementation and progress through review and planning meetings; resettlement committees. • Recommend and initiate remedial action; resolve complaints 	PPSC/PIU/DIU	Ongoing during project planning and implementation	Included in cost estimate
Ministries	Setting policy and guidelines, coordinating, issuing approvals or finance	Collaboration (medium)	<ul style="list-style-type: none"> • Approvals and advice: coordination, direction and approval of technical and implementation matters. Participation is through review of key documents, safeguards, and proposals, issuing statements and directives, project management and coordination meetings 	PPSC, NPMO	As required during project implementation	Included in cost estimate

X. ANTICORRUPTION POLICY

107. Under the current project, ADB's Anticorruption Policy (1998, as amended to date) was explained to and discussed with MAF and Governor's offices of Bokeo, Louang-Namtha, Oudomxai and Phongsali. The provisions of this policy have been reiterated to MAF under the overall project. Consistent with its commitment to good governance, accountability, and transparency ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the project.²¹ All contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agency and all project contractors, suppliers, consultants and other service providers. Individuals/entities on ADB's anticorruption debarment list are ineligible to participate in ADB-financed activity and may not be awarded any contracts under the overall project.²²

108. To support these efforts, relevant provisions of ADB's Anticorruption Policy are included in the grant agreement and the bidding documents for the overall project. In particular, all contracts financed by ADB in connection with the overall project shall include provisions specifying the right of ADB to audit and examine the records and accounts of MAF, NPMO, the PPOs, and DCOs, as well as all contractors, suppliers, consultants, and other service providers as they relate to the overall project. Individuals/ entities on ADB's anticorruption debarment list are ineligible to participate in ADB- financed activity and may not be awarded any contracts under the overall project.²³ The project design and implementation arrangements provide for mitigation of corruption risks. Risks associated with project management, including procurement and disbursement, will be mitigated by the engagement of GIC to advise and assist in the procurement of goods and services, and the engagement of other consultants. The overall project will continue to operate the website established under the current project or a subpage under the existing MAF's website in which it will disclose implementation progress; bid notifications and their results; and provide grievance redress mechanism against any corrupt practice. References on ADB's Anticorruption Policy can be accessed through the following link: <http://www.adb.org/Integrity/>.

²¹ Available at: <http://www.adb.org/Documents/Policies/Anticorruption-Integrity/Policies-Strategies.pdf>

²² ADB's Integrity Office web site is available at: <http://www.adb.org/integrity/unit.asp>

²³ ADB's Integrity Office web site is available at: <http://www.adb.org/integrity/unit.asp>

XI. ACCOUNTABILITY MECHANISM

109. People who are, or may in the future be, adversely affected by the overall project may submit complaints to ADB's Accountability Mechanism. The accountability mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the accountability mechanism, affected people should make a good faith effort to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the accountability mechanism.²⁴

XII. RECORD OF PAM CHANGES

110. All revisions/updates during course of implementation will be recorded under this chapter. The PAM was discussed during the negotiation for additional financing held in Vientiane, Lao PDR on 15 November 2016.

²⁴ For further information see: <http://www.adb.org/Accountability-Mechanism/default.asp>.

ANNEX A: Priority List of PRI Subprojects

ANNEX A: Priority List of PRI Subprojects							
Province	District	Subproject	Sub-schemes	District Priority	Command Area Ha	Estimated Cost (\$'000)	Comments
Short List							
Bokeo							
1	Houayxai	Nam Tin 2	2	1	456	1,427	
2		Nam Satone	4	2	253	794	
3	Paktha	Houay Xo 2	6	1	210	661	
4		Houay Sat 2	2	2	208	654	
5	Pha Oudom	Houay Bong	6	1	369	1,159	
6		Nam Kha	3	2	495	1,547	
		No.of Sub-schemes	23		1,991	6,242	
Louang-Namtha							
1	L. Namtha	Nam Lue - Nam Chang	3	1	307	963	
2		Nam Tha	1	2	504	1,575	
3	Sing	Nam Gna 2	1	1	349	1,094	
4		Nam Gna 1 and 3	6	2	350	1,094	
5	Long	Nam Sa	4	1	134	427	
6		Nam Ma	7	2	257	807	
		No.of Sub-schemes	22		1,901	5,960	
Phongsali							
1	Nhot Ou	Nam Tong	3	1	558	1,745	
2		Dong Nouark	1	2	203	638	
3	Bountai	Nam Ngaen 2	3	1	147	464	
4		Houay Lap	4	2	143	450	
5	Bouneua	Ham Hoy - Nam Lou	4	1	206	646	
6		Nam Ngay - Nam Boun	3	2	106	336	
		No.of Sub-schemes	18		1,363	4,279	
Oudomxai							
1	Beng	Nam Beng	3	1	345	1,129	
2		Nam Hao	2	2	411	1,284	
3	Houn	Nam Oun	1	1	376	1,128	
4		Nam Ngaad	4	2	413	1,294	
		No.of Sub-schemes	10		1,545	4,835	
		Total No.of Shortlisted Sub-schemes	73				
		Total No.of Shortlisted Subprojects	22		6,800	21,316	
Province	District	Subproject	Sub-schemes	District Priority	Command Area Ha	Estimated Cost (\$'000)	Comments
Standby List							
Bokeo							
1	Houayxai	Houay Pong	4	3	205	635	
2		Lam Laem	5	4	177	552	
3	Pha Oudom	Houay Lieng 3 & 4	2	3	212	654	
4		Houay Khog	6	4	256	794	
		No.of Sub-schemes	17		850	2,635	
Phongsaly							
1	Nhot Ou	Houay Keng	2	3	340	1055	
		No.of Sub-schemes	2		340	1,055	
		Total No.of Standby Sub-schemes	19				
		Total No.of Standby Subprojects	5		1,190	3,690	
		Total No.of Sub-schemes	92				
		Total No.of Subprojects	27		7,990	25,006	

Annex B

**Institutional Analysis of
Monitoring and Evaluation Section
Project Management Division
Department of Planning and Cooperation**

A. Introduction and Background

1. The aide memoire of the mid-term review for the G0235-LAO: Northern Rural Infrastructure Development Sector Project (the current project), done in March-April 2014, explains that with assistance from the Food and Agriculture Organization (FAO) a monitoring and evaluation (M&E) program was established in February 2012 in the Department of Planning and Cooperation (DOPC) under the Ministry of Agriculture and Forestry (MAF). A program known as the Project Monitoring Information System (ProMIS) was developed to facilitate and manage sector M&E. In support of this initiative, Output 3 in the design and monitoring framework in the Project Administration Manual (PAM) for the Current project provides support for a monitoring and evaluation (M&E) section to be established in DOPC by December 2012; the section was to have a sector-wide mandate.

2. In a letter to ADB on 30 March 2015, DOPC requested that any further support for sector M&E be reduced from the scope of the current project and transferred elsewhere. Whilst acknowledging that the sector M&E system needed strengthening in the technical and operational areas, DOPC explained in the letter that it was proving to be difficult to provide such strengthening effectively under an implementation project with a geographically defined scope. It was suggested that the support should be provided under an independent sector-wide technical assistance. It was also argued that a sector activity such as this may lead to a loss of focus during implementation of the current project, which should focus more on specific project targets.

3. On 9 April 2015, ADB responded by fax explaining that support to sector M&E was a key activity needed to deliver output 3, and suggesting that the institutional capacity needs of this aspect be reviewed under S-PPTA 8882 for additional financing. Accordingly, this brief paper provides an analysis of the institutional framework within which the M&E section operates its capacity, and the suitability of supporting a sector-wide activity under the current project. It further explores any potential impact that the deletion of sector M&E might have on output 3.

B. Institutional Framework

4. In 2012, a Project Management Division (PMD) was established within DOPC through a Departmental Agreement (Organization and Functioning of the Project Management Division). This Agreement was made pursuant to MAF Agreement 1884/DOE, 9 August 2012 (Organization and Functioning of DOPC) and Prime Minister Decree 262, 28 June 2012 (Organization and Functioning of MAF). PMD began to function effectively around mid-2013.

5. DOPC's role is the management of research in the sector, promotion of M&E of projects implemented in the sector and assistance to the development of the sector. PMD is established as a division within DOPC, and serves as Secretariat to the Director General. The Agreement establishing PMD....*sets up the location, role, functions, mandate, structure, organization and methods of work as a reference to the organization and functioning of PMD aimed at*

implementing tasks to effectively and efficiently manage the implementation of ODA projects of the agriculture and forestry sector.

6. Among PMD's several functions is the centralized management of M&E for the sector, which requires it to coordinate with relevant MAF agencies at the central and local levels, as well as international agencies. PMD is headed by a Division Director, below which there are three functional sections, each headed by a Deputy Director. Below each Deputy Director, there is a Section Head responsible for the day-to-day functions of their respective section. Within each section, there are two units, as set out below:

- i) **M&E Section for ODA projects.**
 - a. M&E Unit
 - b. Coordination and Support Unit.
- ii) **Financial and Procurement Section.**
 - a. Finance and Procurement Unit
 - b. Project Asset Control Unit.
- iii) **Management Information System Section (MIS).**
 - a. Data Processing and Mapping Unit.
 - b. Server Administration and Services Unit.

7. PMD has an authorized staffing level of 14 personnel, comprising of Division Director (1), Deputy Division Director (3), Unit Heads (3) and Unit Staff (3x2=6). At this point, 11 positions have been filled; the position for Deputy Division Director for MIS is vacant, as is one of the Unit staff positions for the M&E Unit. The main functions of the M&E Unit include:

- i) Support, monitor and evaluate ODA projects;
- ii) Develop MIS to monitor project implementation and reporting;
- iii) Evaluate progress against plans for projects; and
- iv) Coordinate with relevant agencies to monitor project indicators.

C. M&E – Activities to date

8. In 2010, ADB approved the current project which made provision for some \$226,600 to provide capacity building support for the development and establishment of a sector M&E program. The support was to be provided under output 3: Capacities of National, Provincial and District Agencies Strengthened to Enable a Sector Development Approach. National level initiatives were to support the government's policy to establish a central project management for sector development, which was to include support for the nascent M&E Section within DOPC, as well as provide capacity building support for provincial and district staff for the effective implementation of sector projects.

9. Over the period 2012–2013, FAO provided support to PMD for the development of a proto-type system of M&E (ProMIS) using data collected from the three targeted provinces under the current project - Bokeo, Saravane and Vientiane (two districts per province). It is generally recognized that significant progress was made during the two years development phase, both in terms of the system development as well the setting up of the necessary institutional operating structure at the three requisite levels, i.e. the Province and District Agriculture and Forestry Office (PAFO/DAFO), MAF technical departments and DOPC. Although MAF wish to adopt ProMIS for further roll-out in the future, it is widely recognized that

these institutional structures require considerable strengthening, as does PMD itself, especially since it needs to play a lead role.

10. Following FAO assistance, PMD has developed an internal draft paper that proposes to address the capacity concerns of the institutional structures at all levels, including system refinement of the M&E system (ProMIS) and expansion of the pilots in the original district target areas to all districts in the provinces. PMD has estimated the cost of capacity building at around \$700,000.

11. By the midterm review of the current project (March-April 2014), there had been no significant support for sector M&E under output 3 of the project. The Aide Memoire of the mid-term review noted this situation, and requested the current project to provide greater assistance to PMD to build its capacity in M&E, and required a proposal for capacity building to be submitted ADB for consideration. Training was subsequently provided for ProMIS in the current project's provinces and districts in June and July 2014, as shown in the table below. By the time of the review mission (14-28 November 2014) however, there was considerable concern growing within DOPC that sector-wide M&E activities were not appropriate under a project (the current project) with specific scope, and DOPC considered that the initiative should be transferred out of the current project.

12. During the same mission, it was agreed to reallocate some \$180,000 from the M&E category (07) to the consulting services category (04) in the grant financing plan, a sum which was required to cover the cost of consulting services to support the Grant Implementation Consultant in preparation for the additional financing for NRI. This left a balance of around \$29,450 in category (07) for sector M&E. At that point, it was agreed between the EA and ADB that one further round of ProMIS training should be provided using the balance of funds, which took place in January and February 2015, as shown in the table below. At this time, of the original \$226,600 allocated for M&E, there is now only a little over \$14,000 remaining in Category (07) for sector M&E activities.

Training	Period	Budget (Kip)	Budget (\$)
1 st Round Workshop Training	02 June to 25 July 2014	138,862,652	17,144
2 nd Round Workshop Training	14 January to 25 February 2015	122,142,000	15,079
Total		261,004,652	32,223

Source: DOPC fax to LRM, 30 March 2015

13. On 30 March 2015, DOPC submitted a fax to ADB advising that the project's achievement under category (07) had been mainly to establish a project M&E system up to that time. In the letter, the EA recognized that more support was needed to strengthen the system to monitor sector results, but should not be pursued any further under the current project. The reasons given were:

- (i) The proposal to strengthen sector M&E was developed during the PPTA for the current project, and circumstances had changed since that time;
- (ii) It would be more appropriate to strengthen sector M&E under a more focused technical assistance; and
- (iii) The current project needed to focus more on specific project targets, as indicated in the PAM.

D. Findings

14. Without donor support, it is clear that PMD can only sustain a very limited amount of M&E activity and is not able to further increase its staffing levels due to budgetary constraints. The Project Administration Manual for the current project requires the M&E Unit in PMD to have a staff of at least ten (10) people by December 2012, whereas there is currently only one staff member covering the activities in both the M&E Unit and the Coordination and Support Unit. PMD has limited absorptive capacity at his stage.

15. Without adequate and routine budget support and the necessary staffing levels, it is difficult to see how any relatively short-term capacity building effort would lead to any sustainable and effective change within PMD and the M&E institutional structure. Any donor-funded capacity building effort needs to be carefully implemented at a pace consistent with the absorptive capacities of PMD and the other parts of the institutional structure at the national and local levels, whilst recognizing the limitations imposed by the actual budget levels.

16. Although a sector-wide approach M&E approach is a commendable objective, it is evident that it is not making any significant progress under the current project structure. One reason is that PMD is not a part of the project structure. Support for sector M&E needs to have PMD as the focal point of the implementation arrangements, and the support needs long-term institutional support.

E. Conclusions and Recommendations

17. Although it is clear to all stakeholders that the sector M&E system needs strengthening, as events have unfolded over the past several years, it is now clear that PMD and other parts of the M&E institutional structure have not been able to develop to a level anticipated by FAO or ADB in its current project. This report agrees with DOPC that the sector M&E support under output 3 is no longer appropriate under the current project. It is recommended that it be deleted from the design and addressed under a medium to long-term TA initiative, with a very clear focus on PMD, and implemented at a rate consistent with the available budget and staffing levels to ensure sustainability. It would be far more effective if PMD could be the implementing agency.

18. It is considered that the deletion of sector-wide M&E support under output 3 will not be detrimental to the project. Support for sector-wide M&E is only one initiative under a more comprehensive capacity building effort under output 3 at both the central and local levels, all of which are evidently supported very effectively. It should be noted that the Current project has a very effective project-specific M&E system, which is well regarded by ADB staff at LRM.

19. Although there are no longer sufficient funds left in the financing plan to support any significant sector-wide M&E activities, PMD's need to support this initiative has been clearly expressed by its staff as well as staff of DOPC.

Annex C: Procurement Plan

Basic Data

Project Name: Northern Rural Infrastructure Development Sector Project Additional Financing	
Project Number: LAO 42203	Approval Number: NYA
Country: LAO PEOPLE'S DEMOCRATIC REPUBLIC	Executing Agency: Ministry of Agriculture and Forestry
Current Project Financing Amount: \$23,000,000 ADB Additional Financing: \$35,600,000 Non-ADB Financing: \$3,200,000 (Government) Beneficiaries: \$500,000	Implementing Agency: Provincial Agriculture and Forestry Offices of Bokeo, Luang-Namtha, Oudomxai, and Phongsali provinces
Date of First Procurement Plan: 15 November 2016	

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

1. Procurement and Consulting Methods and Thresholds

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

Procurement of Goods and Works		
Method	Threshold	Comments
National Competitive Bidding (NCB) for Works	Below \$3,000,000 but \geq \$100,000	<p>NPMO to procure all NCB packages. The first 2 contracts will be subject to ADB's prior review and approval. Subsequent contracts for similar work will be subject to post-review.</p> <p>Harmonized standard bidding document for national competitive bidding documents (NCB) for procurement of works shall be used.</p> <p>EA shall commit to using the format and standard NCB documents reviewed and approved by ADB as the model for procuring of succeeding packages.</p>
National Competitive Bidding for Goods	Below \$1,000,000 but \geq \$100,000	<p>NPMO to procure all NCB packages. The first 2 contracts will be subject to ADB's prior review and approval.</p> <p>Harmonized standard bidding document for national competitive bidding documents (NCB) for procurement of goods shall be used.</p> <p>EA shall commit to using the format and standard NCB documents reviewed and approved by ADB as the model for procuring of succeeding packages.</p>
Shopping for Works	Below \$100,000	The first 2 contracts will be subject to

		<p>ADB's prior review and approval. Subsequent contracts for similar work will be subject to post-review.</p> <p>National standard request for quotation (RFQ) for procurement of works shall be used.</p> <p>EA shall commit to using the format and standard RFQ documents reviewed and approved by ADB as the model for procuring of succeeding packages.</p>
Shopping for Goods	Below \$100,000	Prior/Post review, and RFQ document and sampling will be the same as Shopping for Works.

Note: For the procurement of items below \$10,000, the executing and implementing agencies may purchase the items directly from suppliers, and in such cases, ADB should be satisfied that the price paid is reasonable.

Consulting Services	
Method	Comments
Consultants' Qualifications Selection (CQS)	Involves small contracts with specialist organizations for time critical work. To be recruited by NPMO.
Fixed Budget Selection (FBS)	TOR is precisely defined, resources have been accurately assessed, and the budget needs to be fixed. NPMO will recruit an international firm for this well-defined activity.

2. Goods and Works Contracts Estimated to Cost \$3 Million or More

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

Package Number ⁵	General Description	Estimated Value	Procurement Method	Review (Prior / Post)	Bidding Procedure	Advertisement Date (quarter/year)	Comments
	none						

3. Consulting Services Contracts Estimated to Cost \$100,000 or More

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

Package Number	General Description	Estimated Value (\$)	Recruitment Method	Review (Prior / Post)	Advertisement Date (quarter/year)	Type of Proposal	Comments
CS01	Project Implementation Consultant	\$4.0 mil	Negotiated contract variation	Prior	n/a	n/a	A contract variation will be issued after successful negotiations.
CS02	Engineering	\$1.7 mil	CQS	Prior	Q4 2017 (first	BTP	National.

Package Number	General Description	Estimated Value (\$)	Recruitment Method	Review (Prior / Post)	Advertisement Date (quarter/year) package)	Type of Proposal	Comments
	Consulting Firm						9 packages to be recruited by NPMO
CS03	Social Impact Assessment Consultant	\$0.45 mil	CQS	Prior	Q2 2017	BTP	National. 3 packages to be recruited by NPMO
CS04	External Safeguard Monitor	\$0.30 mil	CQS	Prior	Q3 2017	BTP	National. 1 package to be recruited by NPMO
CS05	Irrigation Subsector Review	\$0.40 mil	FBS	Prior	Q3 2017	BTP	1 package to be recruited by NPMO
CS06	External Auditor	0.08	CQS	Prior	Q3 2017	BTP	1 package to be recruited by NPMO

4. Goods and Works Contracts Estimated to Cost Less than \$3 Million and Consulting Services Contracts Less than \$100,000 (Smaller Value Contracts)

The following table groups smaller-value goods, works and consulting services contracts for which the activity is either ongoing or expected to commence within the next 18 months.

Goods and Works								
Package Number	General Description	Estimated Value \$	Number of Contracts	Procurement Method	Review (Prior / Post)	Bidding Procedure	Advertisement Date (quarter/year)	Comments
NRI-NCB-01	Productive Rural Infrastructure (subprojects)	2.26 mil	2	NCB	Prior	1S1E	Q3 2017	NPMO to procure
NRI-NCB-2	Motor Vehicles (13 units)	0.60 mil	1	NCB	Prior	1S1E	Q3 2017	NPMO to procure
NRI-SP-01	Motorcycles (60 units)	0.09 mil	1	Shopping	Prior		Q3 2017	NPMO to procure
NRI-SP-02	Office Refurbishment for PAFOs/ DAFOs	0.14 mil	4	Shopping	Prior/ Post		Q3 2017	NPMO to procure
NRI-SP--3	Office Equipment and Furniture for PAFOs/ DAFOs	0.07 mil	4	Shopping	Prior/ Post		Q3 2017	NPMO to procure

Consulting Services								
Package Number	General Description	Estimated Value (\$)	Number of Contracts	Recruitment Method	Review (Prior / Post)	Advertisement Date (quarter/year)	Type of Proposal	Comments
	none							

B. Indicative List of Packages Required Under the Project

The following tables provides an indicative list of goods, works and consulting services contracts over the life of the project, other than those mentioned in previous sections (i.e., those expected beyond the current period).

Goods							
Package Number	General Description	Estimated Value (cumulative) (\$)	Estimated Number of Contracts	Procurement Method	Review (Prior / Post)	Bidding Procedure	Comments ⁷
	none						

Works							
Package Number	General Description	Estimated Value (cumulative) (\$)	Estimated Number of Contracts	Procurement Method	Review (Prior / Post)	Bidding Procedure	Comments
	Productive Rural Infrastructure (subprojects)	22.0 mil	Multiple	NCB	Post	1S1E	NPMO to procure

Consulting Services							
Package Number	General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Recruitment Method	Review (Prior / Post)	Type of Proposal	Comments
	none						

C. List of Awarded and On-going, and Completed Contracts

The following tables list the awarded and ongoing contracts, and completed contracts.

a. Awarded and Ongoing Contracts

Package Number	General Description	Estimated Value	Contract Value	Procurement Method	Advertisement Date (quarter/year)	Date of ADB Approval of Contract Award	Comment ¹⁰
NRI-NCB-007	Subproject Works Y1, B2: Houay Xo Irrigation (Bokeo)	321,202.00	293,192.35	NCB	1Q/2013	4 Apr 2013	By NPMO Completed date: Jan 2015

Package Number	General Description	Estimated Value	Contract Value	Procurement Method	Advertisement Date (quarter/year)	Date of ADB Approval of Contract Award	Comment ¹⁰
NRI-NCB-011	Y2: Kormaeen-Phongseak Road (Phongsali)	573,723.00	560,396.00	NCB	4Q/2013	21 Mar 2014	By NPMO Completed date: Feb 2015
NRI-NCB-012	Y2: Nam Thae Irrigation (Phongsali)	397,886.00	401,633.00	NCB	4Q/2013	21 Mar 2014	By NPMO Completed date: Jun 2015
NRI-NCB-013	Y2: Nam Ngaene Irrigation (Phongsali)	517,450.00	514,143.00	NCB	4Q/2013	21 Mar 2014	By NPMO Completed date: Jul 2015
NRI-NCB-014	Y2: Nam Gngang Irrigation (L. Namtha)	478,569.00	451,142.00	NCB	4Q/2013	21 Mar 2014	By NPMO Completed date: Jun 2015
NRI-NCB-015	Y2: Nam Gna6-Houay Luang Irrigation (L. Namtha)	476,472.00	418,669.00	NCB	4Q/2013	21 Mar 2014	By NPMO Completed date: Jul 2015
NRI-NCB-016	Y2: Nam Bak Irrigation (L. Namtha)	455,633.00	413,849.00	NCB	4Q/2013	21 Mar 2014	By NPMO Completed date: May 2015
NRI-NCB-018	Y2: Houay Sat Irrigation (Bokeo)	370,680.00	334,185.00	NCB	4Q/2013	21 Mar 2014	By NPMO Completed date: Jul 2015
NRI-NCB-019	Y2: Nam Haad Left Bank Irrigation (Bokeo)	493,093.00	448,434.00	NCB	4Q/2013	21 Mar 2014	By NPMO Completed date: Mar 2015
NRI-NCB-020	Nam Xang Irrigation (Phongsali)	400,100.00	396,010.27	NCB	1Q/2015	18 Sep 2015	By NPMO Completed date: May 2016
NRI-NCB-021	Nam Ngene and Nam Hin Irrigation (Phongsali)	483,700.00	451,032.51	NCB	1Q/2015	24 Sep 2015	By NPMO Completed date: May 2016
NRI-NCB-022	Nam Ngaene Thong Paene Irrigation (L. Namtha)	639,200.00	456,567.14	NCB	1Q/2015	18 Sep 2015	By NPMO Completed date: May 2016
NRI-NCB-023	Nam Gna (IV) & (V) Irrigation (L. Namtha)	484,100.00	451,543.71	NCB	1Q/2015	18 Sep 2015	By NPMO Completed date: May 2016
NRI-NCB-024	Houay Makmue Irrigation (L. Namtha)	453,700.00	441,424.47	NCB	1Q/2015	18 Sep 2015	By NPMO Completed date: May 2016
NRI-NCB-025	Nam Chae Irrigation (Bokeo)	352,600.00	316,585.93	NCB	1Q/2015	24 Sep 2015	By NPMO Completed date: May 2016
NRI-NCB-026	Houay Sa II Irrigation (Bokeo)	379,200.000	334,407.60	NCB	1Q/2015	24 Sep 2015	By NPMO Completed date: Mar 2016
NRI-NCB-027	Houay Lieng Irrigation (Bokeo)	496,900.00	440,548.74	NCB	1Q/2015	24 Sep 2015	By NPMO Completed date: Feb 2016

b. Completed Contracts

Goods and Works

Package Number	General Description	Estimated Value	Contract Value	Procurement Method	Advertisement Date (quarter/year)	Date of ADB Approval of Contract Award	Completion Date	Comment
NRI-SG-001	Two Pick Up Trucks		73,800.00	Shopping		9 Nov 2011		By NPMO Completed
NRI-SG-002	One Utility Vehicle		76,000.00	Shopping		9 Nov 2011		By NPMO Completed
NRI-SG-003	One Pick Up (4WD)		34,203.00	Shopping		20 Mar 2012		By NPMO Completed
NRI-SG-004	One Mini Bus		37,000.00	Shopping		07 May 2012		By NPMO Completed
NRI-SG-005	One Utility Vehicle		76,000.00	Shopping		07 May 2012		By NPMO Completed
NRI-SG-007	Motorcycles		60,660.60	Shopping		07 May 2012		By NPMO Completed
NRI-SG-008 (A-C)	Six Pick Up Trucks		218,100.00	Shopping		23 Oct 2013		By NPMO Completed
NRI-SG-006	Office Equipment (I.T. Equipment for NPMO, PPOs, and DCOs)		54,305.00	Shopping		20 Mar 2012		By NPMO Completed
NRI-SG-009	Office Equipment (for NPMO, PPOs, and DCOs)		53,104.00	Shopping		26 Oct 2012		By NPMO Completed
NRI-SG-010-01	Office Equipment (for NPMO, PPOs, and DCOs)		11,396.79	Shopping		Oct 2013		By NPMO Completed
NRI-SG-010-02	Office Equipment (for NPMO, PPOs, and DCOs)		6,202.90	Shopping		Oct 2013		By NPMO Completed
NRI-SG-010-03	Office Equipment (for NPMO)		3,836.50	Shopping		Nov 2013		By NPMO Completed
NRI-SG-011	Office Equipment (for NPMO)	50,000.00	0	Shopping		Canceled		By NPMO Completed
045	Office Equipment (for Phongsali: PPO and DCOs)		16,215.71	Shopping		Sep 2012		By PPO/PSL Completed
01	Office Equipment (for Louang-Namtha: PPO and DCOs)		2,409.45	Shopping		Mar 2013		By PPO/LNT Completed

Goods and Works								
Package Number	General Description	Estimated Value	Contract Value	Procurement Method	Advertise -ment Date (quarter/ year)	Date of ADB Approval of Contract Award	Completion Date	Comment
02	Office Equipment (for Louang-Namtha: PPO and DCOs)		1,185.88	Shopping		May 2013		By PPO/LNT Completed
03	Office Equipment (for Louang-Namtha: PPO and DCOs)		1,618.74	Shopping		Jun 2013		By PPO/LNT Completed
04	Office Equipment (for Louang-Namtha: PPO and DCOs)		902.33	Shopping		Nov 2013		By PPO/LNT Completed
091	Office Equipment (for Bokeo: PPO and DCOs)		5,327.66	Shopping		Apr 2012		By PPO/BOK Completed
613	Office Equipment (for Bokeo: PPO and DCOs)		11,440.84	Shopping		Sep 2013		By PPO/BOK Completed
0326	Office Refurbishment / Renovation Bokeo DCOs (Lot Nos.2-4)	30,000.00	29,597.85	Shopping		20 Jun 2013		By NPMO Completed
0336	Bokeo PPO (Lot No. 1)	30,000.00	29,348.93	Shopping		20 Jun 2013		By NPMO Completed
0389	Louang-Namtha PPO and DCOs	60,000.00	58,688.75	Shopping		25 Jun 2013		By NPMO Completed
403	Phongsali PPO (Lot No. 1)	30,000.00	31,128.41	Shopping		Sep 2013		By NPMO Completed
404	Phongsali DCO-Nhot Ou	10,000.00	10,376.14	Shopping		Sep 2013		By NPMO Completed
405	Phongsali DCOs – Phongsali & Boun-Tai	20,000.00	20,779.22	Shopping		Sep 2013		By NPMO Completed
NRI-NCB-001	NRI/NPMO Office Renovation	178,000.00	175,000.00	NCB	Q1/2012	Apr 2012		By NPMO Completed
	Associated Initiatives							
082	Construction	16,000.00	15,514.58	Shopping		23 Jul 2013		By PPOs

Package Number	General Description	Estimated Value	Contract Value	Recruitment Method	Advertisement Date (quarter/year)	Date of ADB Approval of Contract Award	Completion Date	Comments
	Grant Implementation Consultants	3,600,000.00	3,611,027.00	QCBS	Q3/2010	31 May 2011		By NPMO On-going
Package 1	DD, PBD, CS Consultants (Y1, B1)	117,000.00	117,000.00	CQS	Q3/2011	6 Feb 2012		By NPMO Completed
Package 2	FS Consultants (Y1, B2)	60,000.00	59,670.00	CQS	Q3/2011	6 Feb 2012		By NPMO Completed
Package 3	DD, PBD, CS Consultants (Y1, B2 - Bokeo)	79,000.00	78,945.00	CQS	Q2/2012	4 Jul 2012		By NPMO Completed
Package 4	DD, PBD, CS Consultants (Y1, B2 – L. Namtha)	66,000.00	65,830.00	CQS	Q2/2012	17 Jul 2012		By NPMO Completed
Package 5	DD, PBD, CS Consultants (Y1, B2 – Phongsali)	79,000.00	74,760.00	LCS	Q2/2012	17 Aug 2012		By NPMO Completed
Package 6	FS Consultants (Y2)	67,000.00	67,000.00	CQS	Q3/2012	21 Sep 2012		By NPMO Completed
Package 8	DD, PBD, CS Consultants (Y2 – Bokeo)	106,000.00	105,698.75	CQS	Q2/2013	10 Jul 2013		By NPMO Completed
Package 9	DD, PBD, CS Consultants (Y2 – L. Namtha)	106,000.00	105,498.75	CQS	Q2/2013	10 Jul 2013		By NPMO Completed
Package 10	DD, PBD, CS Consultants (Y2 – Phongsali)	100,000.00	100,068.80	CQS	Q2/2013	10 Jul 2013		By NPMO Completed
Package 11	FS Consultants (Y3)	67,000.00	67,000.00	CQS	Q3/2013	30 Sep 2013		By NPMO Completed
Package 12	DD, PBD, CS Consultants (Y3 – Bokeo)	106,000.00	105,900.75	CQS	Q3/2014	20 Jan 2015		By NPMO Completed
Package 13	DD, PBD, CS Consultants (Y3 – Louang-Namtha)	106,000.00	105,900.75	CQS	Q3/2014	20 Jan 2015		By NPMO Completed
Package 14	DD, PBD, CS Consultants (Y3 – Phongsali)	68,000.00	68,000.55	CQS	Q3/2014	20 Jan 2015		By NPMO Completed

Goods and Works								
Package Number	General Description	Estimated Value	Contract Value	Procurement Method	Advertise -ment Date (quarter/ year)	Date of ADB Approval of Contract Award	Completion Date	Comment
Package 7-1	Safeguards Monitoring of Year 1	50,000.00	51,000.00	CQS	Q4/2012	27 Mar 2013		By NPMO Completed
Package 7-2	Safeguards Monitoring Entity (2014)	50,000.00	41,500.00	CQS	Q1/2014	19 May 2014		By NPMO Completed
Package 7-3	Safeguards Monitoring Entity (2015-2016)	105,020.00	101,980.00	CQS	Q1/2015	03 Jun 2015		By NPMO On-going
Package 15	DD, PBD Consultants (2 subprojects in Oudomxai)	70,000.00	65,000.00	FBS	Q3/2016	Q3/2016	11 Oct 2016	By NPMO On-going

D. Non-ADB Financing

The following table lists goods, works and consulting services contracts over the life of the project, financed by Non-ADB sources.

Goods and Works				
General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Procurement Method	Comments
none				

Consulting Services				
General Description	Estimated Value \$ (cumulative)	Estimated Number of Contracts	Recruitment Method	Comments
none				

E. National Competitive Bidding

1. Regulation and Reference Documents

1. The procedures to be followed for National Competitive Bidding (NCB) shall be those set forth for "Public Bidding" in Prime Minister's Decree No. 03/PM of the Lao People's Democratic Republic, effective 09 January 2004, and Implementing Rules and Regulations effective 12 March 2004 with update 0861/MOF of 05 May 2009 entitled "Amendments of Some Articles of Implementing Rules and Regulations on Decree Of Government Procurement Of Goods, Works, Maintenance And Services", with the clarifications and modifications described in the

following paragraphs required for compliance with the provisions of the Procurement Guidelines.

2. Procurement Procedures

a. Procurement Plan

2. Contract packages subject to NCB procedures will be those identified as such in the project Procurement Plan. Any changes to the method of procurement from those provided in the Procurement Plan shall be made through updating of the Procurement Plan, and only with prior approval of ADB.

b. Eligibility

3. The eligibility of bidders shall be as defined under Section I of the Procurement Guidelines; accordingly, no bidder or potential bidder should be declared ineligible for reasons other than those provided in Section I of the Guidelines, as amended from time to time.

c. Preferences

4. No preference of any kind shall be given to domestic bidders or for domestically manufactured goods.

5. Suppliers and contractors shall not be required to purchase local goods or supplies or materials.

d. National Sanctions List

6. National sanctions lists may be applied only with prior approval of ADB.

e. Advertising

7. The posting of NCB specific notices for contracts valued at less than \$1 million on ADB's website is not required but is highly recommended.

3. Procurement Documents

a. Use of Harmonized Documents

8. The harmonized standard bidding documents entitled "Procurement of Works, NCB-SBD, Harmonized Bidding Documents, December 2015" and "Procurement of Goods, NCB-SBD, Harmonized Bidding Documents, December 2015" approved by the Ministry of Finance through 3246/MOF dated 28 September 2015, and approved by ADB by *OSFMD/OSP2* dated 7 June 2016, shall be used for all procurement by NCB unless exceptions are specifically identified in the Procurement Plan.

4. Rejection of all Bids and Rebidding

9. Bids shall not be rejected and new bids solicited without ADB's prior concurrence.

5. Disclosure of Decisions on Contract Awards

10. At the same time that notification on award of contract is given to the successful bidder, the results of the bid evaluation shall be published in a local newspaper or well-known freely accessible website identifying the bid and lot numbers and providing information on (i) name of each Bidder who submitted a Bid, (ii) bid prices as read out at bid opening, (iii) name of bidders whose bids were rejected and the reasons for their rejection, (iv) name of the winning Bidder, and the price it offered, as well as the duration and summary scope of the contract awarded. The executing agency/implementing agency shall respond in writing to unsuccessful bidders who seek explanations on the grounds on which their bids are not selected.

6. ADB Policy Clauses

11. A provision shall be included in all NCB works and goods contracts financed by ADB requiring suppliers and contractors to permit ADB to inspect their accounts and records and other documents relating to the bid submission and the performance of the contract, and to have them audited by auditors appointed by ADB.

12. A provision shall be included in all bidding documents for NCB works and goods contracts financed by ADB stating that the Borrower shall reject a proposal for award if it determines that the bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the contract in question.

13. A provision shall be included in all bidding documents for NCB works and goods contracts financed by ADB stating that ADB will declare a firm or individual ineligible, either indefinitely or for a stated period, to be awarded a contract financed by ADB, if it at any time determines that the firm or individual has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices or any integrity violation in competing for, or in executing, ADB-financed contract.

ANNEX D TERMS OF REFERENCE FOR CONSULTING SERVICES

A. BACKGROUND

1. Consultants to be financed from the Grant include (i) the Grant Implementation Consultant (GIC); (ii) Engineering Consulting Firm (ECF) to assist in the preparation and supervision of PRI subproject civil works; (iii) Social Impact Assessment Consultants (SIA); (iv) External Safeguards Monitor (ESM); and (v) Irrigation Subsector Review Consultant (ISR). All consultants and institutes will be selected and engaged in accordance with the ADB's Guidelines on the Use of Consultants.

2. Since the project represents additional financing to the current project, every effort has been made to maintain existing implementation arrangements, as they have proven to be effective, as demonstrated by the current project's track record. Thus, the EA has requested, and ADB supports, the continuation of the consulting services being provided by the current project's Grant Implementation Consultant (GIC) into the overall project. The extension of services will be covered by a contract variation to the existing contract for GIC, which will now be referred to as the Grant Implementation Consultant (GIC) under the overall Project. The outputs and deliverables from all consulting services shall be in accordance with the government policies, and in support of the provincial development strategies and the needs of the beneficiaries.

3. Advance action has been requested by EA, and is supported by the Asian Development Bank (ADB) to:

- (i) Extend the services for the GIC for the current project to also cover the overall project as the GIC; and
- (ii) Start the recruitment process for the ECF for the first batch of two PRI subprojects.

B. GRANT IMPLEMENTATION CONSULTANT

4. The contract for the existing GIC for the current project will be varied to cover the expanded scope of work under additional financing, and will be referred to as the GIC under the overall project. The contract variation will be based on existing terms and conditions in the contract, and will endure for a period of five (5) years from the agreed date of mobilization which is scheduled for the first quarter of 2017.

5. Based on experiences and lessons learned under the current project as well as the evolving needs of the project, the team will be amended with the addition of:

- two (2) senior irrigation engineers (national),
- one (1) land use specialist (national),
- two (2) bio-engineers (international and national),
- two (2) draftsmen (national), and
- one (1) land titling coordinator.

6. Deleted positions include that of:

- two (2) rural roads engineers (international and national);

- one (1) land use specialist (international), and
- one (1) policy development specialist.

7. Under the contract variation, GIC will:

- assist the National Project Management Office (NPMO) to implement the overall project and meet the reporting and procedural requirements of ADB;
- undertake feasibility studies/investment reports, including technical assessments, financial and economic analysis of PRI subprojects, and preparation of safeguard documents;
- assist NPMO in the recruitment and supervision of all consultants;
- monitor and evaluate quality of all consulting services;
- assist in the supervision of the construction work by serving as the “Employer’s Representative”; and
- assist in project performance monitoring and evaluation.

8. The GIC contract variation will comprise a total of 414 person-months including 81 person-months of international specialists and 333 person-months of national specialists. GIC will provide a range of specialties including (i) irrigation engineering, (ii) gender/community development, (iii) resettlement, (iv) project monitoring and evaluation, (v) marketing/value addition, (vi) strengthen sustainable subproject O&M arrangements through WUGs; (vii) environment, (viii) land titling, (ix) land-use planning/geographic information systems, (x) agricultural extension, (xi) bio-engineering, and other areas to be subsequently identified. The estimated requirement for consultant expertise is outlined below.

Table 1: Project Implementation Consultant Inputs by Year

POSITION TITLE		2017	2018	2019	2020	2021	2022	Total
I. Implementation Specialists (Output 4)								
1. International								
1	Team Leader/Irrigation Engineer	6.0	5.5	5.0	5.0	4.0	2.0	27.5
2	Resettlement Specialist	3.0	3.0	3.0	1.0		1.0	11.0
3	Environmental Specialist	3.0	3.0	3.0	1.0		1.0	11.0
4	Agricultural Economist	2.0	2.0	2.0	1.0		1.0	8.0
5	Unallocated	0.0	0.0	0.5	0.0	0.0	0.0	0.5
	Sub-total International	14.0	13.5	13.5	8.0	4.0	5.0	58.0
2. National								
1	Deputy Team Leader/Irrigation Engineer	9.0	10.0	10.0	10.0	10.0	1.0	50.0
2	Senior Irrigation Engineer (1)	9.0	11.0	9.0	9.0	2.0		40.0
3	Senior Irrigation Engineer (2)	9.0	11.0	9.0	9.0	2.0		40.0
4	Resettlement Specialist	4.0	5.5	5.5	5.5	2.0	1.0	23.5
5	Monitoring and Evaluation Specialist	5.0	6.0	6.0	6.0	5.0	3.0	31.0
6	Environmental Specialist	3.0	6.0	5.0	5.0		1.0	20.0
7	Agricultural Economist	2.0	2.0	2.0	2.0	1.0	1.0	10.0
8	Draftsman [1]	1.0	1.0	1.0				3.0

9	Draftsman [2]	1.0	1.0	1.0				3.0
10	Unallocated		0.5					0.5
	Sub-total National	43.0	54.0	48.5	46.5	22.0	7.0	221.0
	Sub-Total Implementation Specialists	57.0	67.5	62.0	54.5	26.0	12.0	279.0
II. Productivity & Impact Enhancement Specialists (Output 2)								
1. International								
1	Gender/ Ethnic Group/Community Development Specialist	4.0	3.0	3.0	3.0		1.0	14.0
2	Marketing and Value Added/Contract Farming Specialist	3.0	2.0	2.0	1.0			8.0
3	Bioengineer	1.0						1.0
	Sub-total International	8.0	5.0	5.0	4.0	0.0	1.0	23.0
2. National								
1	Gender/Ethnic Group/Community Development Specialist	6.0	6.0	6.0	6.0	4.0	2.0	30.0
2	Marketing and Value Added/Contract Farming Specialist	3.0	6.0	6.0	3.0		2.0	20.0
3	Land Titling Coordinator	5.0	5.0	5.0	5.0	4.0		24.0
4	Land Use Planning/GIS Specialist [1]	3.0	6.0	6.0	4.0		1.0	20.0
5	Land Use Planning/GIS Specialist [2]	3.0	3.0					6.0
6	Bioengineer	2.0						2.0
7	Agronomist	3.0	3.0	2.0	2.0			10.0
	Sub-total National - Capacity Building	25.0	29.0	25.0	20.0	8.0	5.0	112.0
	Sub-Total Productivity And Impact Enhancement Specialists	33.0	34.0	30.0	24.0	8.0	6.0	135.0
Total international specialists		22.0	18.5	18.5	12.0	4.0	6.0	81.0
Total national specialists		68.0	83.0	73.5	66.5	30.0	12.0	333.0
TOTAL SPECIALISTS		90.0	101.5	92.0	78.5	34.0	18.0	414.0

1. IMPLEMENTATION SPECIALISTS

Irrigation Engineers/Team and Deputy Team Leader - (27.5 pm International and 50 pm National)

9. The positions are required to assure that design quality will be maintained and that there is adequate technical support available during the preparation of PRI subproject designs and their subsequent review based on technical criteria. They will also be needed to support the provincial project management offices (PPMOs) as they proceed during implementation to assist in PRI subproject supervision during construction and to strictly enforce the safeguard requirements during construction of works. In addition expertise is needed as many watersheds have complex hydrologic characteristics and need thorough analysis before investing in the rehabilitation of a downstream irrigation system.

10. The positions require preferably 10 years' experience in the field of irrigation system design and more than 5 years of experience as a consulting engineer. They will be based within the NPMO but will be required to travel on frequent occasions to the project areas, sometimes for extended periods. The specialists will have tertiary qualifications from an

established and recognized institution and will be fluent in the English language. Individual specialists will be able to demonstrate good written skills in English and the national in Lao language (national specialist only). Both will have good interpersonal and communication skills and will be familiar working in large multi-national teams.

11. Duties of the specialists will include the following:

- (i) Establish the Quality Assurance Regime for irrigation PRI subprojects;
- (ii) Prepare construction supervision quality control guidelines to be followed by the national consultants appointed to carry out this task. This shall specifically address the quality control of materials and the construction processes;
- (iii) Prepare all PRI subproject FS and prepare a PRI subproject investment report (SIR). In general the preparation shall;
 - Include field inspections of the proposed sites;
 - Pay special attention to minimizing any disturbance to the natural environment and mitigating and corrective measures as appropriate;
 - Ensure the design for safety and mitigate any potential hazards;
 - Ensure that designs take account of more intense and frequent extreme rainfall events, and more severe droughts expected to develop with climate change. In particular ensuring design measures to increase resistance to damage associated with increased runoff. These include design of irrigation headworks, canals, control structures, and emergency measures such as spillways to activate when during extreme events;
- (iv) Assist NPMO with the SIRs for the following specific technical issues;
 - Ensure that canal design is appropriate given the characteristics of the command area and cropping alternatives;
 - The hydrological analysis is current and future demands anticipated from the water source will be accommodated given the run-off and other catchment characteristics;
 - Include low cost soil and water conservation and stabilization measures through bio-engineering in the environs around the infrastructure;
 - Ensure the design of irrigation structures to improve efficiency of water utilization and facilitate efficient water management during the operational phase;
- (v) Assist the NPMO and relevant Department of Agriculture and Forestry Offices/District Agriculture and Forestry Offices in rationalizing the use of water for irrigation purposes where there are competing demands for the resource such as industry, domestic water supply, etc;
- (vi) In coordination with the other technical specialists, prepare training courses in the use of quality control guidelines;
- (vii) Carry out the training program and coordinate activities related to capacity

- building for and skill transfers to the EA and IA staff; and
- (viii) Building upon successful irrigation experiences in Lao PDR and neighboring countries review and assess O&M requirements and arrangements and make recommendations for optimum O&M practice. In close liaison with the irrigation system owner, manager and users develop asset management plans for each PRI subproject.

Resettlement Specialists (11 pm International and 23.5 pm National)

12. Resettlement is unlikely to be a significant issue in the implementation of the overall project in view of the identification criteria and the pre-screening activities already undertaken during the preparation phase. In order to address the concerns, international and national specialists will be engaged to assist NPMO to ensure that resettlement procedures are followed in accordance with laws of Lao PDR and policies of ADB. The specialists will assume responsibility for the training of NPMO and PPMO staff in resettlement issues and procedures. They will also be responsible for establishing procedures in respect of resettlement and assist in the identification of procedures to resolve any resettlement that might be needed associated with rural infrastructure rehabilitation. The international specialist will have tertiary qualifications in an appropriate discipline and will have more than 10 years of experience working in the field of resettlement for internationally-funded development projects, some of which will have been undertaken in Lao PDR. The national specialist will also be an experienced specialist with preferably 5 years practical experience with appropriate tertiary qualifications. The national specialist will be conversant with the resettlement laws of Lao PDR and will also have considerable experience in internationally-financed development projects where resettlement was an issue. The specialists will be based in NPMO and will travel throughout the project area as required, answering to the GIC team leader.

13. Duties of the specialists will include the following:

- (i) Review the PAM and the recommendations on land acquisition and resettlement therein;
- (ii) Review the Resettlement Framework in the PAM to prepare the safeguard studies for all PRI subprojects;
- (iii) Make recommendations to develop the RPs to a standard acceptable to ADB and have those changes incorporated in the SIRs;
- (iv) Visit all participating provinces and brief the provincial administrations, PPMOs and participating district staff on the land acquisition and resettlement requirements and, specifically how they differ from standard government procedures in light of ADB policies;
- (v) Prepare all RPs for FS and SIRs in accordance with the resettlement framework;
- (vi) Liaise with the safeguards officer in each PPMO and randomly review resettlement procedures being undertaken by the provincial and district governments and report anomalies to NPMO and relevant PPMO; and
- (vii) Assist in developing and implementing the training program on the land acquisition and resettlement aspects.

Environmental Specialists (11 pm International and 20 pm National)

14. Environmental issues are one area of safeguards that will be emphasized under the Project during implementation. While the pre-screened PRI subprojects are expected to have minimal long term environmental impacts, there are possibly short-term concerns for which mitigation strategies need to be designed and implemented. International expertise is needed to ensure that the PRI subprojects have well developed and executable environmental management plans with appropriate mitigation measures based on the environmental assessment and review framework prepared. They will develop mechanisms to ensure that mitigating measures are observed and will establish reporting formats to monitor the performance of contractors during the construction phase when environmental impacts are most likely. The specialists will have appropriate tertiary qualifications in environmental science or natural resource management from a recognized institution and will have more than 10 years of experience working in the field of environmental management for internationally funded development projects, some of which will have been undertaken in Lao PDR or the region. The national specialist will also have considerable experience in environmental monitoring and will be familiar with the laws of Lao PDR associated with the environment as well as having had experience in internationally funded development projects as an environmentalist. Training skills would also be an advantage to the international and national specialists. The specialists will be based in NPMO and will be required to visit PRI subproject sites for monitoring purposes and training as required while being responsible to the GIC team leader.

15. Duties of the specialists will include:

- (i) Review the environmental recommendations of the PAM and the formats for environmental examinations contained therein;
- (ii) Brief the participating PPCs, PPMOs and participating district staff in participating provinces on environmental procedures and requirements for PRI subproject preparation;
- (iii) Visit random PRI subprojects during the PRI subproject preparation to ensure environmental safeguards are being properly conducted;
- (iv) Prepare the initial environmental examinations and environmental management plans contained in the feasibility studies and SIRs;
- (v) Liaise with the safeguards officers in each PPMO and make spot checks during implementation to ensure that environmental plans are being properly implemented; and
- (vi) Assist in the preparation and implementation of training activities with regard to the environmental aspects of the proposed Project.

Agricultural Economists (8 pm International and 10 pm National)

16. The specialists will have tertiary qualifications from an established and recognized institution and will be fluent in the English language. The economists will preferably have 10 years of experience in the economic analysis of rural infrastructure development projects preferably financed by ODA donors. They will be responsible for undertaking economic and financial due diligence of the feasibility studies. The international specialist will work together with the national specialist at the initiation of field studies to ensure that the approaches and

methodologies being used meet acceptable international standards. Specific tasks for the position include the following:

- (i) Review the economic and financial analyses in the PAM and determine the appropriateness of the models and assumptions used;
- (ii) Make any necessary adjustments considered necessary and review input costs and expected benefits;
- (iii) Determine likely cropping patterns and consequent benefits of each of the PRI subproject schemes;
- (iv) On the basis of capital and recurrent costs undertake an economic analysis of each PRI subproject and determine an expected economic internal rate of return;
- (v) Examine likely operational costs and determine appropriate water user fees (where relevant) and scheme operation and maintenance;
- (vi) Review farm budgets and expected farmer income to determine the capacity to fund operation and maintenance costs;
- (vii) Contribute to the assessment of a PRI subproject's viability and feasibility in the feasibility studies and SIRs; and
- (viii) Suggest measures to enhance or improve economic and financial viability in the case of PRI subprojects with promising social benefits but marginal economic and/or financial rates of return.

Senior Irrigation Engineers - (2 National positions, 40 pm each)

17. The proposed positions are required to lead the preparation of FS and SIRs, ensure PRI subproject design quality and provide quality control on behalf of the Employer during construction. The specialists will have qualifications from a nationally recognized institution, and will be familiar with working in large multinational teams. The specialists will preferably have 10 years of experience. Specific tasks will include:

- (i) Assist with the establishment of the Quality Assurance Regime for the irrigation PRI subprojects;
- (ii) Assist NPMO with the preparation of FS and SIRs;
- (iii) Carry out field inspections of the project sites including interviews with intended farmer beneficiaries and officials/members of WUAs/WUGs
- (iv) Prepare construction supervision quality control guidelines to be followed by the national consultants appointed to carry out this task. This shall specifically address the quality control of materials and the construction processes;
- (v) Undertake the necessary technical surveys to allow the preparation of FS and SIRs; prepare technical designs of the PRI subprojects to FS level and prepare costs to a level to allow economic and financial due diligence to be undertaken;
- (vi) Review layout and technical design of proposed PRI subproject works, and recommend improvements in the design of irrigation structures in irrigation related PRI subprojects to improve efficiency of water utilization and facilitate efficient water management during the operational phase;
- (vii) Ensure that canal design is appropriate given the characteristics of the command area and cropping alternatives;

- (viii) Audit the design for safety and provide guidance accordingly to mitigate any potential hazards;
- (ix) Brief consulting engineers engaged to prepare detailed designs on the proposed changes and explain the reasons for these changes; and
- (x) Review detailed designs and assist with the preparation of PRI subproject investment reports.

Monitoring and Evaluation Specialist (31 pm National)

18. PBME is an important aspect of the project to ensure that benefits are realized as intended and that they are shared by all members of the target communities, particularly by the poor and ethnic group households. To achieve this, there needs to be baseline studies undertaken during the PRI subproject design phase to identify the current socio-economic conditions of target beneficiaries to assess the impact after PRI subproject completion. To ensure that representative information is collected and that the full extent of variation is captured within the sample population of the surveys, it is important to have experienced PBME specialists to assist in overall survey design and to provide the principles for analyzing the results. In addition, the specialist will be responsible for establishing performance monitoring of the implementation of PRI subprojects to facilitate reporting to the Government and ADB. The specialist will have tertiary qualifications in rural development or a related field and have preferably 10 years of experience as PBME specialist or related area. He/she will be responsible to the GIC Team Leader and be based in NPMO with frequent travel to the target provinces as required.

19. Duties of the specialists will include:

- (i) Review the monitoring and evaluation recommendations in the PAM;
- (ii) Together with NPMO staff and GIC team leader determine the optimum type of monitoring program for project implementation, safeguards and benefits;
- (iii) Together with NPMO staff, and with reference to the Project Design Monitoring Framework (DMF), design a monitoring system and develop the Project M&E Manual based on measurable inputs, outputs and outcomes;
- (iv) Together with NPMO staff, brief PPMOs on their duties and responsibilities under the Project monitoring system;
- (v) Assist in recruiting an agency or institution to undertake benefit monitoring;
- (vi) Guide the benefit monitoring agency in undertaking baseline surveys, developing monitoring parameters and scheduling monitoring activities; and
- (vii) Periodically review monitoring activities during project implementation and report any deficiencies, problems, issues or shortcomings to NPMO.

Draftsmen (2 National positions, 3 pm each)

20. The draftsmen will have preferably five (5) years of experience in the detailed drafting of infrastructure designs, preferably in rural infrastructure development. Experience with AutoCAD or equivalent software program is essential. The specialist will work closely with and report to the senior irrigation engineers, and ultimately the team leader. Specific tasks include:

- (i) Based on designs prepared by the senior irrigation engineers, prepare detailed drawings for the PRI subprojects to the standard required by NPMO;
- (ii) Based on the detailed drawings, prepare bills of quantity or cost estimates of the PRI subproject works; and
- (iii) Undertake field visit whenever necessary to ascertain the physical circumstances affecting any proposed building.

Unallocated Specialists (One International and one national specialist for 0.5 pm each)

21. This item is intended to provide resources for as yet unidentified areas of technical expertise that might be needed for the implementation of the Overall project. Detailed TORs are to be developed by NPMO with the support of GIC.

b. PRODUCTIVITY AND IMPACT ENHANCEMENT

Gender, Ethnic Group, and Community Development Specialists - (14 pm International and 30 pm National)

22. The safeguard requirements of ADB seek to ensure the poor and other disadvantaged groups within the target area access project benefits. This will require specialist expertise in identifying affected groups characteristics and needs and accommodating these needs wherever feasible. Given the large proportion of ethnic groups among the target population, measures will need to be taken to ensure these groups benefit from project interventions. The specialists will support project initiatives in community development including gender and indigenous peoples' activities. One of the major targets in community development is to formulate a water user group (WUG) in each PRI subproject, which will be responsible for O&M of irrigation facilities. The WUG should be further developed financially to be a water user association (WUA), which is officially certified by the district government under the Decree on the Establishment and Operation of the Water Users Associations (No.1150/AF in 2000). There will be capacity building in these areas that will also form part of the responsibilities of the specialists. The specialists will assist NPMO, PPMOs and district coordination offices (DCOs) in developing and implementing initiatives to assure that benefits are shared by all disadvantaged groups including the ethnic groups. In addition, there is scope to develop other associated initiatives that will target women, the poor and ethnic groups that require further definition during preparation of PRI subprojects for funding under the proposed Project. The international specialist will have tertiary qualifications from an internationally recognized institution with preferably 10 years of experience in the South East Asian environment. Preferably 3 years of experience will have been obtained in Lao PDR. The national specialist will have similar qualifications from a national educational institution and will also have preferably 10 years of experience in related fields on internationally funded projects.

23. Duties of the specialists will include the following:

- (i) Review the Poverty and Social Assessment, GAP, and Indigenous Peoples Planning Framework (IPPF) in the PAM to ascertain the nature and extent of interventions considered appropriate under the Overall project;
- (ii) Review/ascertain changes or updates to ADB and Government policies on ethnic groups, gender and poverty as set out in the PAM;
- (iii) Prepare and deliver workshops on safeguards/gender to ensure sound understanding of the principles and operational requirements for NPMO, PPMO and DCO staff and other relevant stakeholders;

- (iv) Together with the NPMO safeguard specialists prepare and implement the social-economic/gender surveys for the PRI subproject FS and prepare Social Impact Assessment reports, GAP and IPPs where required ensuring these conform to ADB standards;
- (v) Working with the NPMO, PPMOs and DCOs ensure that all provisions and requirements from all approved PRI subproject FS GAPs, IPPs and poverty recommendations are undertaken and ensure they are appropriately monitored by the project benefit monitoring and evaluation (PBME) systems;
- (vi) Monitor all PRI subprojects to determine if serious negative impacts on ethnic groups, women or other disadvantaged groups are occurring and make recommendations to the NPMO and PPMO to ameliorate/mitigate these;
- (vii) Monitor all PRI subprojects to determine any opportunities to enhance positive impacts on ethnic groups, women or other disadvantaged groups and make recommendations to the NPMO and PPMO to implement these in other PRI subprojects;
- (viii) Monitor community involvement in PRI subproject implementation and bring issues or problems to the attention of the NPMO and relevant PPMOs;
- (ix) Working with the NPMO, PPMOs and DCOs formulate a water user group (WUG) in each PRI subproject, and strengthen its financial management capacity to be a water user association (WUA);
- (x) Working with the NPMO, PPMOs and DCOs develop and oversee implementation of interventions that will ensure water user groups (WUGs) and other community/producer groups are effectively functioning and representative of the community (including women);
- (xi) Document the community participation process and make recommendations for changes in processes and procedures for the balance of the project to strengthen the understanding and skills of government staff in this critical area;
- (xii) Develop the TOR, including selection criteria, for the nine DCO based Community Development Officers and from a needs analysis identify suitable training packages to be undertaken by them at the beginning of the project;
- (xiii) Assist the PPMOs and DCOs in development of performance frameworks and quarterly activity schedules for the Community Development Officers; and
- (xiv) Other relevant duties and responsibilities as required by GIC team leader.

Marketing and Value Added/Contract Farming Specialists - (8 pm International and 20 pm National)

24. To maximize the potential from associated initiatives, GIC will include value chain specialists to assist in PRI subproject design and FS ensuring engagement of private sector actors in such processes to strengthen the market linkages for products grown in the Project's area of influence. The value chain specialists will provide intermittent inputs and will be responsible to the GIC Team Leader. The specialists should have an undergraduate degree in agricultural business, economics or equivalent with strong skills and experience in strengthening agricultural value chains in Lao PDR or neighboring countries.

25. Duties of the specialists will include:

- (i) Review the PAM and the value chain studies and assessed constraints and opportunities therein;
- (ii) As part of the PRI subproject FS and design, support PPMOs to identify relevant private actors, drawing upon provisional options developed during design, in light of community level commodity production plans and interests;
- (iii) As part of PRI subproject FS and design, support value chain stakeholder meetings between major commodity buyers and community/producer group representatives to (a) review menu of options prepared, (b) identify which actions or others, are required to strengthen value chain operation, and (c) develop actions at farm and higher levels as appropriate. This will include consideration of opportunities for in-village bulking/value addition and may lead to public-private partnership models described below;
- (iv) Support NPMO in the identification and development of mechanisms and materials for the establishment of different forms of village level (including multiple village) producer organizations including, WUGs, producer groups, processor groups, farmer group enterprises, and potentially in the longer term, formalized collaborative structures with commercial registration;
- (v) Support PPMO's access technical specialist resources associated with production and value addition as required in support of extension services;
- (vi) During PRI subproject implementation, support implementation of value chain activities with particular emphasis on those PRI subprojects where producer group or more formalized village level structures are engaged in more complex value addition (e.g. tea, rubber);
- (vii) Provide training and support to PPMO and DCO staff in developing and undertaking higher level value-chain studies required within individual PRI subprojects, including assessment of neighboring international markets for more specialized production (e.g. demand for specific maize types for industrial processing in regional markets);
- (viii) Assist in the identification of more specialized post-harvest processing technologies appropriate to specific PRI subproject contexts;
- (ix) Support NPMO in the development of pro-forma contract farming guidelines and contracts which: (a) address or mitigate key risk areas for producers and purchasers, (b) engage all producers within the group to participate in contract review and approval processes, (c) clearly stipulate required commodity purchase condition including commodity quality standards and packing where appropriate, and (d) stipulate commodity floor prices against quality standards (where applicable);
- (x) Support NPMO in the development of public-private partnership operational guidelines and agreements associated with private sector engagement in public sector (i.e. group level) commodity processing, storage and /or handling facilities. Where private sector operators provide guaranteed markets and provide technical and managerial assistance to processing/producer groups associated with facility operation and management; and
- (xi) Collaborate with the Policy Research Institute of NAFRI in identifying and documenting: (a) successful models of public-private partnerships b) village level production / processing / marketing groups, and (c) other potential areas

of policy interest for the development of policy briefs.

Bioengineers (1 pm International and 2 pm National)

26. The specialists will have a degree in agricultural engineering, crop science, soil science, forestry or equivalent with more than 10 years of experience in bioengineering in tropical and sub-tropical developing countries. Experience in the region, especially in GMS and Lao PDR, is desirable.

27. Responsibilities: Identify approaches for PRI sustainability and climate resilience. The tasks of the Bioengineer include but are not limited to:

- (i) Coordinate with the other engineers and the environment/climate change specialist in the application of bio-engineering techniques for soil and water stabilization.
- (ii) Review the subproject designs and apply the guidelines and approaches developed during the L3024-LAO: GMS EWEA Agriculture Infrastructure Sector Project PPTA to protect the PRI against soil erosion, shallow planar sliding on sloping terrain, improve surface drainage and reduce slumping; and
- (iii) Establish and implement a regular monitoring and analysis system for the Project to record the effectiveness of the measures against control sites.

Land Titling Coordinator – (24 pm National)

28. To coordinate and oversee the land titling activities, GIC will include a land titling coordinator who will coordinate with district land titling teams and oversee all activities from irrigation block identification and survey through to adjudication and issue of the final land ownership certificate. Coordination will include all activities associated with any grievances arising from the land titling process. The specialist will provide intermittent inputs over the life of the project, and will be responsible to the GIC team leader. The specialist will have preferably 3 years in land titling, and will preferably have some experience on multi-laterally-funded development projects.

29. Duties of the specialist will include:

- (i). As part of the PRI subproject FS and design, work with the provincial land titling teams and WUGs to help identify and locate all relevant plot boundaries within the command area;
- (ii). Assist the provincial land titling teams to conduct WUG participatory meetings to secure agreement on ownership of boundaries and obtain agreement on the fees to be paid;
- (iii). Coordinate all land survey activities by the engineering design consultant and ensure good cooperation with the provincial land titling teams to establish accurate cadastral maps;
- (iv). Assist in the coordination of all adjudication activities between the provincial land titling teams and landowners;
- (v). Coordinate with the provincial land titling teams to ensure that all legally required documentation associated with the land titling process is prepared to ensure the protection of the landowners;

- (vi). Ensure that any issues or complaints raised through the grievance redress mechanism are adequately dealt with by the responsible authorities;
- (vii). Work with the provincial land titling teams and surveyors to ensure that adequate cadastral maps and other appropriate records are retained by the PAFO/DAFO and landowners; and
- (viii). Coordinate with the land titling teams for the issuance of the land ownership certificates for the members of the WUG.

Land-Use Planner/GIS Specialist - (20 pm of National [senior] and 6 pm of National [assistant])

30. The Project will mainly invest in the rehabilitation of rural infrastructure, such as access roads and irrigation schemes, and therefore provide improved access to markets and services. Besides this, it will also provide financial and technical support to implement associated initiatives that will add value and secure the executed investments into infrastructure in different ways. Among others, land-use planning and securing land tenure in catchments surrounding rehabilitated or extended irrigation schemes, is one of the associated initiatives. It will contribute to ensuring that appropriate land uses are planned at catchment level to secure their watershed functions, such as providing sustained water flow and quality, but also to reduce erosion and associated siltation problems.

31. The senior position should have tertiary qualifications in the field of Natural Resource Management or related fields (e.g. watershed management, forestry, agriculture). He/she shall have preferably 10 years of work experience in land use planning, GIS application and spatial data management in the context of Natural Resource Management (NRM), rural development or watershed management projects. The application of related knowledge and skills throughout the working history has to be demonstrated and familiarity with software packages used in Lao PDR is required. Familiarity with ADB projects and experiences in remote sensing will be an advantage. He/she will have demonstrated capacity to train and lead national staff and is expected to be proficient in English (written and orally).

32. Main tasks for the senior specialist include:

- (i) Analyze training needs related to land-use planning/ catchment zoning (district level staff) and GIS/spatial data management (national level staff);
- (ii) Develop appropriate training materials;
- (iii) Organize and conduct related training (formal/ on-the job training) in accordance with the results of the training needs analysis;
- (iv) Support the procurement and installment of related equipment/ hard/software;
- (v) Backstop and guide the assistant GIS specialist and relevant staff in PRI subproject investment proposal formulation (e.g. planning of activities/budget);
- (vi) Backstop and guide the associated GIS specialist and relevant staff in conducting catchment zoning and land use planning in catchments during PRI subproject implementation;
- (vii) Cooperate and exchange with relevant donor initiatives; and
- (viii) Any other related work as assigned by GIC team leader.

33. The assistant GIS specialist should have tertiary qualification in the field of NRM or related fields (e.g. watershed management, forestry, agriculture). He/she shall have preferably 8 years of work experience in land use planning, GIS application and spatial data management in the context of NRM, rural development or watershed management projects. The application of related knowledge and skills throughout the working history has to be demonstrated. Familiarity with ADB projects and experiences in remote sensing will be an advantage. He/she will have demonstrated experiences in capacity building and coaching of local staff in above mentioned issues. He/she is expected to have good communication skills at working level in English (written and oral).

34. Main tasks for the national specialist include:

- (i) Support the senior consultant in analyzing training needs related to land- use planning/ catchment zoning (district level) and GIS/spatial data management (national/ provincial level);
- (ii) Support the senior consultant in developing appropriate training materials (especially translation);
- (iii) Support the senior consultant in organizing and conducting related training (formal/on-the job training) in accordance with the results of the training needs analysis;
- (iv) Support installment and maintenance of procured equipment/hard/software;
- (v) Support relevant staff in PRI subproject investment proposal formulation (e.g. planning of activities/budget);
- (vi) Support and guide relevant staff in conducting catchment zoning and land use planning in catchments during PRI subproject implementation;
- (vii) Provide necessary materials for land-use planning (e.g. Satellite Image Maps and equipment/ Global Positioning System and maps);
- (viii) Document and monitor land use planning activities related to relevant PRI subprojects;
- (ix) Establish and maintain a spatial data bank with the results of all land use planning activities;
- (x) Cooperate with relevant donor initiatives; and
- (xi) Any other related work as assigned by GIC team leader.

Agronomist - (10 pm National)

34. In view of the fact that the majority of planned PRI subproject investments will be directed at improving on-farm productivity, the services of an agronomist is needed to support the adoption of new production technologies in the areas that have been effected by the proposed Project. Advanced technologies are available but not widely adopted because of the current state of the technical extension services and their lack of resources to support new technologies. One of the likely interventions associated with infrastructure development will be the introduction of modern production techniques as well as higher valued commodities for local and international markets. The national specialist will have tertiary qualifications from a recognized agricultural college or university within the region and will have preferably ten (10) years of experience in agricultural extension or related fields.

35. The main tasks for the agronomist will include:
- (i) Review the eligible PRI subprojects to identify the main commodities that are likely to benefit from the infrastructure improvement;
 - (ii) Based upon this review and on market opportunities identified in the PAM , select commodities to be produced within the areas of impact from PRI subproject investments;
 - (iii) Review the agronomic requirements for these identified commodities and confirm their suitability to be grown in the areas concerned;
 - (iv) In consultation with the expertise already residing in National Agriculture and Forestry Extension Services and using the Lao Extension Approach, develop technical extension packages for the identified commodities;
 - (v) Provide training for technical extension staff in district agriculture and forestry offices in participating districts to strengthen their appreciation of modern production technologies with the identified commodities;
 - (vi) Assist in the development of extension programs to support the improved productivity to be gained from investments in infrastructure such as the System of Rice Intensification (SRI);
 - (vii) Provide technical support to the DCO staff in participating districts in both technical areas as well as in communication techniques;
 - (viii) Assist the project benefit and monitoring staff to measure impacts from infrastructure investments as expressed in increased agricultural productivity, increased production of marketable surpluses and improvement of smallholder livelihoods within the Project area of influence;
 - (ix) Liaise with NAFRI on the progress of development of community based adaptation measures; and
 - (x) Brief and train extension workers in the adoption of the community based adaptation measures.

Implementation Arrangements

36. The additional financing will cover a period from approval to closing date of five years and six months. The contract period for GIC is expected to be five (5) years, from early-2017 to early-2022. GIC will be primarily based in NPMO in Vientiane Capital City, which will provide suitable office accommodation for up to ten (10) consultants at any one time. GIC will also be required to periodically spend time in each of the participating provinces, for which each PPO will provide suitable office accommodation for up to five (5) consultants at any one time.

Client's Input and Counterpart Personnel

37. NPMO and PPOs will make available to GIC all relevant data, maps and reports, and ensure access to all equipment purchased under the Grant at no cost to GIC, including vehicles, office equipment and communication equipment. NPMO and PPOs will provide counterpart and support staff to work with GIC, and will arrange necessary introductions to concerned government organizations, ministries and their departments. Each PPO will also provide translators and interpreters to work with GIC.

Reporting

38. GIC will continue to support the NPMO in the preparing the project reports as established in the current project. With the assistance of translators, GIC will facilitate the translation into the Lao language and distribution to provincial and district stakeholders, the following reports:

- (i) The executive summary of each FS/investment report;
- (ii) The executive summary of each initial environmental examination and social impact assessment; and
- (iii) The public information brochure regarding the resettlement plan and/or land acquisition and compensation plan.

C. Engineering Consulting Firm (ECF)

39. An ECF will be recruited by the EA for each batch of PRI subprojects using CQS procedures (national). Each ECF will have preferably seven (7) years of corporate experience in infrastructure development in the sector, preferably in irrigation. The inputs for the ECF will vary depending on the number of PRI subprojects in each batch. The EC inputs will be around 300 person-months (intermittent) in total over five (5) batches and covering disciplines such as irrigation/team leader, geotechnics/materials, hydrology, contract administration and construction supervision. It is expected that the batches will be as follows:

Phase I	-	one batch of 2 representative PRI subprojects (20 PM). This will be for supervision of construction only.
Phase II	-	Seven PRI subprojects (105 PM): one batch of 3 PRI subprojects (45 PM) and two batches of 2 PRI subprojects (30 PM each).
Phase III	-	Seven PRI subprojects (105 PM): one batch of 3 PRI subprojects (45 PM) and two batches of 2 PRI subprojects (30 PM each).
Phase IV	-	Six PRI subprojects (90 PM): two batches of 3 PRI subprojects (45 PM each)
Total	-	22 PRI subprojects

Implementation Arrangements

40The project period from approval to closing date is five (5) years and six (6) months. Within this period, the contract period for each EA is expected to be no more than 24 months for each batch, with work running in parallel to the extent possible across the batches. Each ECF will be expected to undertake their work from their home office, but will also be required to periodically spend time in each of the participating provinces. NPMO and PPOs will make available to each EC all relevant data, maps and reports, and ensure access to all equipment purchased under the Overall project at no cost to the ECF. NPMO and PPOs will provide counterpart and support staff to work with each ECF, and will arrange necessary introductions to concerned government organizations, ministries and their departments.

Scope

41The scope of services for each batch will include:

- (i) Review of feasibility studies;

- (ii) Field assessment of condition of existing assets;
- (iii) Initial consultations with water user groups and other stakeholders such as DAFO, PAFO, NPMO and GIC;
- (iv) Close cooperation with GIC on the updating of all safeguard documents and the implementation of their requirements, as well as ensuring compliance with the gender action plan;
- (v) Topographic survey and geotechnical investigation – survey to be conducted at an accuracy that will enable the preparation of cadastral maps to the quality required by PONRE;
- (vi) Preparation of detailed designs, drawings, bidding documents, bills of quantity, specifications and contract documents, cadastral maps of all command areas; and final design reports;
- (vii) Consultations with all stakeholders on the designs, including presentations/workshops at the field, district and central levels;
- (viii) Coordinating all aspects of bidding process and contract award, in close cooperation with GIC and NPMO;
- (ix) Contract administration and construction supervision of the batches under its responsibility, including the processing and certification of all payment certificates;
- (x) Ensure all contractors provide as-built drawings; and
- (xi) Issuance of completion certificate.

42. GIC will oversee all work as the Executing Agency/Employer's Representative, and each ECF will report to NPMO through GIC. ECF will work in accordance with an agreed Quality Assurance framework, which will be monitored by GIC.

Reporting and Deliverables

43. ECF will produce the following reports in English:

- (i) A detailed workplan within one month of mobilization;
- (ii) Topographic survey and geotechnical investigation reports;
- (iii) Design reports, drawings, specifications, bills of quantity and bidding documents – up to 10 sets per batch depending on the number of bidders;
- (iv) Cadastral maps acceptable to PONRE for use in the land titling process;
- (v) Monthly reports on progress of all design work and construction work;
- (vi) A draft PRI subproject completion report to be submitted to NPMO/GIC two months before the end of the PRI subproject; and
- (vii) Submit a final PRI subproject completion report within one month of receipt of comments from NPMO/GIC.

D. SOCIAL IMPACT ASSESSMENT CONSULTANT (SIA)

44. An SIA will be recruited by the EA for each phase of PRI subproject implementation using CQS procedures (national).²⁵ The SIA will gather baseline data for the feasibility studies. Each SIA will have preferably seven (7) years of experience in social survey, analysis and reporting in the sector, preferably in irrigation. The inputs for the SIA will vary depending on the number of PRI subprojects in each phase. For a phase of seven (7) PRI subprojects, the SIA inputs will be around 27 person-months covering disciplines such as social impact assessment, community development, surveying and economics. It is expected that the phases will be as follows:

Phase I	-	2 sample PRI subprojects (completed during PPTA 8882-LAO)
Phase II	-	7 PRI subprojects
Phase III	-	7 PRI subprojects
Phase IV	-	6 PRI subprojects
Total	-	22 PRI subprojects

Implementation Arrangements

45. The project period from Additional Financing approval to the closing date is five (5) years and six (6) months. Within this period, the contract period for each SIA is expected to be no more than 9 months for each phase, with work running in parallel to the extent possible across the phases. Each SIA will be expected to undertake their work from their home office, but will also be required to spend considerable time in each of the participating provinces. NPMO and PPOs will make available to each ECF all relevant data, maps and reports, and ensure access to all equipment purchased under the Project at no cost to the SIA. NPMO and PPOs will provide counterpart and support staff to work with each SIA, and will arrange necessary introductions to concerned government organizations, ministries and their departments.

46. GIC will oversee all work as the EA's Representative, and each SIA will report to NPMO through GIC. SIA will work in accordance with an agreed Quality Assurance framework, which will be monitored by GIC.

Scope

47. The scope of works for SIA is summarized below:

- (i) Review the procedure for the conduct of the Socio-Economic Analysis and Social Impact Assessment in accordance with ADB's Policy on Gender and Development (1998) and Safeguard Policy Statement (2009);
- (ii) Conduct socio-economic analysis and social impact assessment of around 7 PRI subprojects as part of the FS, using a statistical analysis package such as SPSS;
- (iii) The socio-economic analysis above includes:
 - a. Preparation of Master Lists (Village household master list, Female-headed households master list, Landless household master list, WUG household master list);

²⁵ SIA for the two sample subprojects has already been conducted as part of project processing.

- b. Conduct village agro-socio-economic survey;
 - c. Irrigation related information survey;
 - d. Sample household agro-socio-economic survey;
 - e. Focus group discussions;
 - f. Post implementation survey and data collection; and
 - g. Social impact assessment of the PRI subproject.
- (iv) Based on the results of the Socio-Economic Analysis and Social Impact Assessment prepare for each PRI subproject a) Ethnic Group Plan (EGP) in accordance with the Indigenous People's Planning Framework of the Project; and b) Gender Action Plan (GAP) in accordance with the Project-Wide Gender Action Plan, which will also form part of the FS Report.
 - (v) Involve and train (on-the-job) concerned staff of the NPMO, PPO and DCO in designing and conducting Socio-Economic Analysis and Social Impact Assessment.

Reporting and Deliverables

- (i) Encode the agro-socio-economic (baseline) data of each PRI subproject following the SIA procedure, which will be compiled with the initial SIA Report.
- (ii) Prepare and submit to NPMO three (3) copies of the draft initial SIA Report of each PRI subproject in English, which includes a) Social Impact Assessment, b) Ethnic Group Plan (EGP), c) Gender Action Plan (GAP) and d) Baseline Data. Hard copies of the reports must be accompanied with soft copies (not pdf).
- (iii) Revise the draft SIA Report based on NPMO/GIC comments.
- (iv) Prepare and submit to NPMO three (3) copies of the Final initial SIA report which includes a) Social Impact Assessment, b) Ethnic Group Plan (EGP), c) Gender Action Plan (GAP) and d) Baseline Data. Hard copies of the reports must be accompanied with soft copies (not pdf).

Social Impact Assessment Team Leader

48. The Social Impact Assessment Team Leader (Gender, Indigenous People and Community Development Specialist), will be responsible in the overall planning and management of the baseline survey and social impact assessment. SIA Team Leader will have preferably 5 years of relevant experience on the planning and conduct of socio-economic analysis and social impact assessment of rural infrastructure or agricultural development projects. S/he will hold a bachelor degree in Irrigation, Agriculture or Economics or Social Sciences or equivalent. Specifically, s/he will be responsible for the following:

- (i) Developing the design and plan for the Socio-Economic Analysis and Social Impact Assessment in coordination with GIC;
- (ii) Formulate data gathering methodologies, i.e., Focus Group Discussion, Interview questionnaires, etc;
- (iii) Train and supervise the Provincial Teams who will perform the data collection, processing and analysis of data per PRI subproject;
- (iv) Review the outputs of the Provincial Teams;

- (v) Prepare the Social Impact Assessment Reports for the PRI subprojects;
- (vi) Prepare i) Indigenous People's Plan, and ii) Gender Action Plan for PRI subproject;
- (vii) Coordinate with the Resettlement Team and the Environmental team in the review/analysis of socio-economic data and information collected in the PRI subprojects and in evaluating the social impact of the PRI subprojects.

Community Development Specialists/Provincial Team Leaders

49. The Community Development Specialist and Provincial Team Leader will lead/supervise the conduct of the Socio-Economic Surveys, Analysis and Social Impact Assessments of the PRI subprojects for each province. The Community Development Specialists/Provincial Team Leaders will have preferably 5 years of experience on the conduct of socio-economic surveys on rural infrastructure or agricultural development projects utilizing different methodologies such as i) Interviews using structured questionnaires, and ii) Focus Group Discussions. Specifically, s/he will be responsible for the following:

- (i) Provide guidance to PRI subproject Teams in conducting data collection for PRI subprojects within his/her provincial jurisdiction;
- (ii) Provide guidance/direction to the PRI subproject Teams in the conduct of data collection for each PRI subproject;
- (iii) Review the outputs of the PRI subproject Teams;
- (iv) Encode the data and information collected for the PRI subprojects to serve as the baseline data and information for each PRI subproject for submission to the SIA Team Leader;
- (v) Assist the SIA Team Leader in doing the Socio-Economic Analysis and draft Social Impact Assessment for the PRI subprojects under his/her responsibility;
- (vi) Assist the SIA Team Leader in preparing the draft of i) Indigenous People's Plan, and ii) Gender Action Plan for the PRI subprojects; and
- (vii) Assist the Provincial Team Leader in finalizing i) SIA Reports; ii) Indigenous People's Plan; iii) Gender Action Plan for PRI subprojects; and iv) Baseline Data and Information;

PRI subproject Team: 1) Agriculture/Irrigation Surveyor, 2) Economic Surveyor, 3) Assistant Surveyor, and 4) Assistant Surveyors

50. Work as a Team in the respective province with the Agriculture/Irrigation Surveyor. The PRI subproject Team will be responsible for gathering data and information for the preparation of the Socio-Economic Analysis and Social Impact Assessment Sections of the Feasibility Report. Their output will also be the basis for the preparation of i) Indigenous People's Plan, and ii) Gender Action Plan for each PRI subproject.

- (i) Conducting data and information collection for their PRI subproject assignment to support the socio-economic analysis and social impact assessment within the PRI subproject coverage. Key informants must consider but not be limited to i) DAFO/DCO; ii) Village Authorities; iii) Ethnic Groups; iv) Gender (Women and Men); v) Water Users' Groups for Irrigation; vi) households; and vii) production groups;
- (ii) Carry out initial processing and analysis of gathered data and information under

the guidance and direction/supervision of the Community Development Specialists/Provincial Team Leaders;

- (iii) Prepare a report based on prescribed formats and submit these to the Community Development Specialists/Provincial Team Leaders for review and further analysis; and
- (iv) Conduct additional data/information gathering whenever so required by the Community Development Specialists/Provincial Team Leaders.

51. The two PRI subproject Teams must be composed of two (2) surveyors, and two (2) assistant surveyors. The surveyors will have education in i) Irrigation or Agriculture; ii) Social Sciences or Education; iii) Economics; or iv) equivalent. They preferably will have 3 years of experience on the conduct of socio-economic surveys on rural infrastructure or agricultural development projects utilizing different methodologies such as i) Interviews using structured questionnaires; and/or ii) Focus Group Discussions.

E. EXTERNAL SAFEGUARDS MONITOR

52. An independent External Safeguards Monitor (ESM) will be recruited by the EA to monitor all safeguard activities under the Project using CQS procedures (national). ESM will focus on assessing progress and compliance with the EMPs, the EGDs, the GAPs, and the LACPs, identifying constraints and developing remedial actions to effectively address these. ESM will have preferably seven (7) years of experience in the area of safeguards. There will be one contract for the ESM covering the whole life of the Project. ESM inputs are expected to be around 40 person-months (intermittent) provided by a national entity, and including disciplines such as resettlement, environment and ethnic groups.

Implementation Arrangements

53. The project period from Additional Financing grant approval to the grant closing date is five (5) years and six (6) months. ESM will be expected to undertake their work from their home office, but will also be required to spend considerable time in each of the participating provinces. NPMO and PPMOs will make available to ESM all relevant data, maps and reports, and ensure access to all equipment purchased under the Project at no cost to the ESM. NPMO and PPMOs will provide counterpart and support staff to work with ESM, and will arrange necessary introductions to concerned government organizations, ministries and their departments.

Scope

54. Key responsibilities of ESM include:

- (i). Review the FS reports of PRI subprojects. The feasibility reports include the annexes of i) Social Impact Assessment (the EGDs, or IPPs and the GAPs), ii) Initial Environmental Examination (the EMPs), and iii) Land Acquisition and Compensation Plan (LACP).
- (ii). To review the participation and disclosure:
 - a. ESM will assess the adequacy of i) process such as participation, consultation, grievance resolution, ii) integration of gender vulnerable groups and ethnic groups into planning and implementation of activities; and iii) mitigation of environmental impacts with respect to the EGDs, GAPs, EMPs and RPs.

- (iii). To develop a monitoring and assessment plan:
 - a. ESM will develop a monitoring and assessment plan responding to the scope of works outlined in these terms of reference including the detailed field survey plan.
- (iv). To conduct field monitoring survey:
 - a. ESM will conduct field monitoring survey according to the monitoring plan by interviewing the concerned households as well as the project staff.
- (v). To conduct water quality monitoring.
- (vi). To assess the attainment and sustainability as defined in the EGDs, GAPs, EMPs and RPs. Particularly, on environmental issues, ESM will provide recommendations for any organizational or methodological improvements with an aim to ensuring the sustainability of the government's internal capacity of environmental monitoring.

55. The results of the monitoring will be part of the six monthly progress reports of the overall project.

Reporting and Deliverables

- (i) Prepare a monitoring and assessment plan as well as the draft contents of the Safeguards Monitoring Report responding to the scope of works outlined in these terms of reference including the detailed field survey plan for each mission.
- (ii) Prepare and submit to NPMO two (2) copies of the draft Safeguard Monitoring Report of each mission with a soft copy.
- (iii) Revise the draft Safeguards Monitoring Report based on NPMO/GIC comments.
- (iv) Prepare and submit to NPMO three (3) copies of the final Safeguard Monitoring Report, which includes the results and assessment on i) EMPs, ii) EGDs (or IPPs), iii) GAPs and iv) RPs. Hard copies of the reports must be accompanied with soft copies (not pdf).

Safeguard Monitoring Team Leader

56. The Safeguard Monitoring Team Leader (Gender, Indigenous People and Community Development Specialist), will be responsible for the overall planning and management of the Safeguards Monitoring. The Safeguard Monitoring Team Leader will have preferably 5 years of relevant experience on the planning and conduct of socio-economic analysis and social impact assessment of rural infrastructure or agricultural development projects. She/he must hold at least an undergraduate Degree on Irrigation, Agriculture or Economics or Social Sciences. Specifically, she/he will be responsible for the following:

- (i) Review of the i) Social Impact Assessment (the EGDs, or IPPs and the GAPs), ii) Initial Environmental Examination (the EMPs), and iii) Land Acquisition and Compensation Plan (LACP) in the FS reports;
- (ii) Review previous Safeguard Monitoring Reports;
- (iii) Assess the adequacy of: i) process such as participation, consultation, grievance resolution, ii) integration of gender vulnerable groups and ethnic groups into planning and implementation of activities; and iii) mitigation of environmental impacts with respect to the EGDs, GAPs, EMPs and RPs;

- (iv) Develop a monitoring and assessment plan responding to the scope of works outlined in these terms of reference including the detailed field survey plan;
- (v) Conduct the field monitoring survey according to the monitoring plan by interviewing the concerned households as well as the project staff of PPOs;
- (vi) Conduct water quality monitoring;
- (vii) Assess the attainment and sustainability as defined in the EGDs, GAPs, EMPs and LACPs. Particularly, on environmental issues, the ESM will provide recommendations for any organizational or methodological improvements with an aim to ensuring the sustainability of the government's internal capacity of environmental monitoring; and
- (viii) Prepare the Safeguard Monitoring Report, which includes the results and assessment on i) EMPs, ii) EGDs (or IPPs), iii) GAPs and iv) LACPs.

Resettlement Specialist

57. The Resettlement Specialist will assist to conduct the field monitoring survey of PRI subprojects. The Resettlement Specialist will have preferably 5 years of experience on the conduct of socio-economic surveys on rural infrastructure or agricultural development projects utilizing different methodologies such as: i) Interviews using structured questionnaires; and ii) Focus Group Discussions. Specifically, s/he will be responsible for the following:

- (i). Conduct the field monitoring survey on resettlement; and
- (ii). Assist the Safeguard Monitoring Team Leader in preparing the draft safeguard monitoring report on: i) Ethnic Group Development Plans (EGDPs), ii) Gender Action Plan (GAPs), and LACPs for the PRI subprojects.

Environment Specialist:

58. The Environment Specialist will assist to conduct the field monitoring survey of PRI subprojects. The Environment Specialist will have preferably 5 years of experience on the conduct of environment surveys on rural infrastructure or agricultural development projects utilizing different methodologies such as: i) Interviews using structured questionnaires; and ii) Focus Group Discussions. Specifically, s/he will be responsible of the following:

- (i). Conduct the field monitoring survey on environment; and
- (ii). Assist the Safeguard Monitoring Team Leader in preparing the draft safeguard monitoring report on Environment Management Plan for the twenty-two (22) PRI subprojects.

Assistant Surveyors

59. Three (3) assistant surveyors should be selected in the relevant provinces, respectively.

F. IRRIGATION SUBSECTOR REVIEW CONSULTANT

Background and Context

60. Irrigation development has been a vitally important and integral part of agricultural and rural development programs throughout Lao People's Democratic Republic (PDR). Irrigated areas have increased from 0.17 million ha in 1995 to 0.41 million ha in 2011, or about 14% of

the agricultural area.²⁶ The contribution of the agriculture, natural resources, and environment (ANRE) sector has decreased from about 29.5% in 2011 to only 27.7% of gross domestic product in 2014; with the majority from the natural resources sector.²⁷ However, continued investment in irrigated agriculture is expected as reflected in the 8th National Socio-Economic Development Plan (NSEDP)²⁸ for 2016-2020 and the Ministry of Agriculture and Forestry (MAF) Agricultural Development Strategy to 2025.²⁹ These include plans for major public and private sector investments for the 7 largest lowland plains and 12 upland plains³⁰ which aim to bring 315,000 ha into production of rice. Lao PDR has expanded its dry season irrigated area from less than 30,000 ha in the mid-1990s to almost 200,000 ha at present.

61. As noted in the Asian Development Bank's (ADB) Sector Assessment,³¹ significant public and private sector investments in irrigation system development have been made over the past 25 years, and continue to be implemented throughout the country. The most recent diagnostic review of the irrigation subsector was undertaken in 2007. The review made strong inroads into defining the challenges facing irrigation management transfer (IMT) and proposing means to create new models for addressing these challenges. However, since 2007, new openings have emerged brought about by the major national policy developments mentioned above, combined with a strengthening of the regulatory frameworks. The need for a further irrigation subsector review is now clear, particularly in light of the emphasis on rice and food commodity production, increasing productivity in the agriculture sector, and developing irrigation in ten high priority rice producing provinces and on 12 upland plains, in the 8th NSEDP and MAF's Agricultural Development Strategy to 2025.

Scope of the Review

62. The scope of the Lao PDR irrigation subsector review will include (i) assessment of the current state of irrigated agriculture in Lao PDR; (ii) identification of strategies for sustainable intensification of agriculture and adaption to climate change; (iii) opportunities for ecosystem assessment to be included in design and management of irrigated agricultural systems to maximize ecosystem services; and (iv) priorities for modernization of irrigated agriculture and irrigation services in Lao PDR. Specifically, the review will assess how the new policy environment would impact irrigation expansion, intensification of land and water resources use, and ecosystem functions. The review will evaluate how current and planned development within watersheds may impact irrigation performance and the trade-offs between irrigated production and other aspects of food production and food security in rural Lao PDR.

63. The review will update the findings of the 2007 irrigation subsector review³² using selected case studies to assess performance of investment projects and the impacts on

²⁶ Lao People's Democratic Republic - Lao Agriculture Census 2010-2011. Lao Department of Statistics, Ministry of Planning and Investment. Vientiane.

²⁷ World Bank Data, Agriculture, value added (% of GDP). <http://data.worldbank.org/indicator/NV.AGR.TOTL.ZS> (Accessed 7 January 2016)

²⁸ Eighth National Social and Economic Development Plan, 2016-2020 (pending approval by the National Assembly)

²⁹ Agricultural Development Strategy to 2025 and Vision to 2030 (approved and endorsed by National Assembly)

³⁰ The 12 upland plains are: Lantu (or Lantui), Phongsaly; Muang Sing, Luang Namtha; Phaohao, Bokeo; Nam Phak, Oudomxay; Nam Xe, Oudomxay; Muang Beng, Oudomxay; Muang Houn, Oudomxay; Nambak, Luang Prabang; Muang Xone, Houa Phan; Muang Nan, Luang Prabang; Xienghon, Xayabouly; Lamam, Xekong.

³¹ ADB 2015 Lao PDR Agriculture, Natural Resources, and Environment Sector, Sector Assessment, Strategy, Roadmap 2017-202, (Draft 26 October 2015) Vientiane

³² Ministry of Agriculture and Forestry, Department of Irrigation, and Programme de capitalisation en appui à la politique de développement rural (PCADR), Irrigation Diagnostic Study. (2008). Vientiane: Agence Française de Développement.

irrigation performance, agricultural production and household incomes; in addition to drawing on the ADB rapid assessment of community managed irrigation weirs in Lao PDR. The review will examine the performance of irrigation subsector institutions, both formal and informal, as a basis for recommendations for further development of these organizations. Analysis will include assessment of the opportunities and constraints associated with the input-output value chain and emerging market opportunities for irrigated production.

64. The review will include assessment of the impact of weirs and other irrigation infrastructure. These are now recognized to pose some challenges for fish migration, which is believed to result in decreased fish catch. The review will assess options to reduce negative impacts of irrigation development on fish migration including through literature reviews of best practice in the region, field surveys of proposed irrigation developments and outline design of potential interventions to mitigate negative impacts of water management infrastructure associated with irrigation on fish migration. The review will propose alternate interventions that can be operated by individual farmers or by communities for testing.

65. The review will also investigate the trade-offs typically arising from increased irrigation, including those associated with: (i) watershed degradation-forest clearing; (ii) land use change/intensification; (iii) increased agrochemical use; and (iv) upstream–downstream effects and potential for increased social conflict.

Focal Issues

66. The Lao PDR irrigation subsector review will include:

- (i) Assessment of the performance of investments in irrigated agriculture from 2000 to 2015, including:
 - a. Performance of investment projects (relevance, efficiency, effectiveness, sustainability and economic performance);
 - b. Impact on household finances;
 - c. Contribution to food and nutrition security;
 - d. Sustainability of investment project outcomes; and
 - e. Irrigation institutions, participatory management and Water User Group (WUG) functioning and lessons learnt, assessment of the effectiveness of institutional developments (WUGs and informal institutional mechanisms) vis-à-vis alternate arrangements. This will also include the following issues: (i) level of understanding and technical capacity of agricultural extension technicians and farmer-irrigators to effectively operate and maintain irrigation systems; (ii) economics of irrigation systems, i.e., the return on investments from rice compared to other high-value crops; (iii) reasons that farmer-irrigators abandon irrigation systems; (iv) effectiveness of training of farmer-irrigators on implementing technical guidelines related to on-farm and in-field water management.
- (ii) Evaluation of the alignment of current and developing Lao PDR agricultural and water sector policy environment vis-à-vis irrigated agriculture to 2025.
- (iii) Assessment of emerging constraints and opportunities for irrigated agriculture; including:

- a. Demographic changes, including urbanization, conversion of agriculture land to concessions, industrial use, and residential areas;
 - b. Climate change;
 - c. Emerging market opportunities and constraints;
 - d. New environmental and ecosystem services concepts and concerns – including options for mitigating irrigation impacts via new models for safeguarding fish migrations by improving the design of community irrigation schemes;
 - e. Identifying new irrigation impacts and trade-offs on fisheries, plant and animal biodiversity and wider ecosystem services; and
 - f. Watershed degradation and land use change impacts on availability and quality of water for irrigation.
- (iv) Identification investment options and priorities for irrigated agriculture and linkages to rural poverty reduction.

Procurement of Consulting Services

67. An international firm shall be recruited using fixed budget selection (FBS) procedures. It is expected that the study will require around 13.5 person-months of expertise covering all facets of irrigation.

Partnerships

68. The successful firm will be expected to bring together relevant government agencies and research for development institutes in a collaborative partnership that includes the ADB, MAFF, Irrigation Department, NAFRI, NUOL and Consultative Group (CG) centers such as IWMI and World Fish.

Budget

69. The contract will be offered on a lump sum basis, and payments will be made in accordance with the output schedule below. The budget is fixed at \$0.40 million.

Outputs

70. The main and final output will be an updated review of the irrigation subsector in Lao PDR that responds to new and emerging challenges in the agriculture sector. The review will present (i) critical lessons from current irrigation sector strategy, (ii) investment priorities to support the irrigation subsector of Lao PDR, (iii) recommendations for further development of irrigated agriculture sector and related support services, and targeted dissemination of findings. Intermediate outputs, which will trigger payments, will be as follows:

- (i) Inception Report and work plan submitted within four (4) weeks of mobilization. Payment of 15%;
- (ii) Interim Report identifying key issues and outline findings, and a dissemination of findings plan submitted after month four (4). Payment of 35%;
- (iii) Draft Final report submitted for Government of Lao PDR and ADB review submitted after month six (6). Payment of 30%;
- (iv) Conduct dissemination workshop and collate comments; and

- (v) Final Report, incorporating responses to Government of Lao PDR and ADB review comments, submitted within 30 days of receipt of the comments, or within 60 days of submission of the Draft Final Report. Final payment of 20%.

Team Composition

71. Candidate firms will propose their team composition in accordance with their estimate of the skills needed to address the objectives of the assignment. It is expected that the following skills will be needed to carry out the associated tasks described below. Candidate firms are not required to use the following team composition or level of inputs.

Irrigation Specialist/ Team Leader (estimated 40 Days – intermittent)

72. The Irrigation Specialist/Team Leader will lead the review team and be responsible for research quality, interaction with the relevant Government of Lao PDR agencies, coordination of the consultancy team and field work; and preparation of reports to the lead agencies and ADB.

73. Specifically, the Irrigation Specialist/Team Leader in consultation with the Lao PDR Irrigation Department and the ADB will be involved in the following

- (i) In the Inception Phase: agree the program of work, including selection of irrigation systems for more detailed review, schedule for field inspections and consultations with Government of Lao PDR agencies and staff, and timing and locations for stakeholder workshops;
- (ii) Evaluation of the alignment of current and developing Lao PDR agricultural and water sector policy environment vis-à-vis irrigated agriculture to 2025;
- (iii) Identification investment options and priorities for irrigated agriculture and linkages to rural poverty reduction;
- (iv) Priorities for modernization of irrigated agriculture and irrigation services in Lao PDR;
- (v) Coordinate and lead preparation of Irrigation Sector Review.

Water Management Specialist (estimated 40 Days – intermittent)

74. The Water Management Specialist will lead the review of water resources issues impacting the irrigation sector, be responsible for research quality in this context, conduct field work; and preparation of the relevant sections of the overall review report.

75. Specifically, the Water Management Specialist, in consultation with the Lao PDR Irrigation Department will be involved in the following:

- (i) Assessment of water resources issues impacting irrigation sector in Lao PDR and identification of strategies for sustainable intensification of agriculture and adaption to climate change;
- (ii) Assessment of the current state of irrigated agriculture in Lao PDR, including effectiveness of training of farmer-irrigators on implementing technical guidelines related to on-farm and in-field water management;
- (iii) Review and synthesize findings from the previous reviews and implications for current review.

Irrigation Engineer/Institutions Specialist (estimated 70 Days – intermittent)

76. The Irrigations Engineer/Institutions Specialist will lead the review on the performance of irrigation institutions and be responsible for research quality in this context, interaction with the relevant Government of Lao PDR agencies, conducting relevant field work and the preparation of institutional analysis sections of the overall review report.

77. Specifically, Irrigations Engineer/Institutions Specialist will be involved in the following:

- (i) Assessment of the status and performance of irrigation institutions, participatory management and Water User Groups (WUG) to identify lessons to guide future irrigation sector development;
- (ii) Assessment of understanding and technical capacity of agricultural extension technicians and farmer-irrigators to operate and maintain irrigation systems as currently developed or planned;
- (iii) Based on field inspections and interview assessment of the cause of farmer-irrigators to neglect and/or abandon irrigation systems;
- (iv) Assessment of provincial and district governments' perceptions on irrigation development in their respective district and provinces;
- (v) Assessment of the extent of streamflow monitoring in Lao PDR, and to what extent it should be modified or expanded in the subsector in the future;
- (vi) Priorities for modernization of irrigated agriculture and irrigation services in Lao PDR; and
- (vii) Preparation of institutional analysis sections of Irrigation Sector Review.

Ecosystem Specialist (estimated 35 Days – intermittent)

78. The Ecosystems Specialist will be responsible for leading the review on the ecosystem inclusive design and management of irrigated agricultural systems to maximize ecosystem services, be responsible for research quality in this context, conducting relevant field work and the preparation of environment and ecosystem services sections of the overall review report.

79. Specifically, the Ecosystems Specialist will be involved in the following

- (i) New environmental and ecosystem services concepts and concerns – including options for mitigating irrigation impacts;
- (ii) Identifying impacts and trade-offs, related to new irrigation developments, trade-offs on fisheries, plant and animal biodiversity and wider ecosystem services;
- (iii) Opportunities for better ecosystem inclusive design and management of irrigated agricultural systems to maximize ecosystem services, including identifying new irrigation impacts and trade-offs on fisheries, plant and animal biodiversity and wider ecosystem services; and Watershed degradation and land use change impacts on availability and quality of water for irrigation;
- (iv) In collaboration with the (a) Fisheries and (b) Irrigation specialists, assess the options for improved design of irrigation infrastructure to maximize ecosystem service values of irrigated agriculture;

- (v) Preparation of environment and ecosystem services sections of Irrigation Sector Review.

Economist (estimated 70 Days – intermittent)

80. The Economist will be responsible for leading the review on the economics of irrigation systems (i.e., the return on investments), be responsible for research quality in this context, conducting relevant field work and the preparation of economic analyses sections of the overall review report.

81. Specifically, the Economist will be involved in the following

- (i) Assessment of emerging constraints and opportunities for irrigated agriculture; including: demographic changes, including urbanization, conversion of agriculture land to concessions, industrial use, and residential areas; and emerging market opportunities and constraints;
- (ii) economics of irrigation systems, i.e., the return on investments from rice compared to other high-value crops; and impact on household finances and contribution of irrigated agriculture to food and nutrition security;
- (iii) Evaluation of sustainability of investment project outcome;
- (iv) Identification investment options and priorities for irrigated agriculture and linkages to rural poverty reduction;
- (v) Preparation of economic analyses (including cost benefit analyses) sections of Irrigation Sector Review.

Fisheries Specialist (estimated 35 Days – intermittent)

82. The Fisheries Specialist will be responsible for leading the review on the options for mitigating irrigation impacts via new models for safeguarding fish migrations or increasing local fish production, be responsible for research quality in this context, conducting relevant field work and the preparation of relevant sections of the overall review report.

83. Specifically, the Fisheries Specialist will be involved in the following

- (i) New environmental and ecosystem services concepts and concerns – with specific focus on options for mitigating irrigation impacts via new models for safeguarding fish migrations by improving the design of community irrigation schemes or increasing local fish production;
- (ii) Identifying impacts and trade-offs, related to new irrigation developments, on fisheries
- (iii) In collaboration with the (a) Ecosystems and (b) Irrigation specialists, assess the options for improved design of irrigation infrastructure to maximize ecosystem service values of irrigated agriculture and contribute to the agreed sections of the irrigation sector review.

84. In addition to the above, national experts from relevant partner institutions and other organizations will also be part of the overall team.

**Annex E. Northern Rural Infrastructure Development Sector Project
Land Titling Approach**

Item	Stage	Inputs	Source
1	Preparation	<p>PPO, DONRE and PONRE reach implementation agreements including strategy, workplan and budget for DONRE and PONRE involvement.</p> <p>They will be responsible for ensuring the required technical and administrative standards are followed and achieved.</p> <p>It is expected that Titling Teams will be established for each province and will be composed as follows:</p> <p>Counterpart staff:</p> <ul style="list-style-type: none"> - PONRE (one female) * 2/province, - DONRE *1/district - DOLA * 1/project <p>In addition they will be supported by:</p> <ul style="list-style-type: none"> - Consultant *1/(project or district, TBD) 	Project, DONRE, PONRE and DOLA
		Project recruits land titling implementation coordinator. This person will coordinate the land titling activities within the project including, planning and reporting.	
		Invitations are made for representatives from DOLA and PONRE to join the national project steering committee and the provincial steering committees respectively.	
2.	Implementation	Information and sensitization to WUGs	Project expanded C&P to provide this support. Carried out by the Titling Teams
		<p>Agreement by WUGs:</p> <ul style="list-style-type: none"> a.) To proceed with land titling; b.) To delineate their land parcels; c.) On overall delineation: 	Carried out by the Titling Teams
		The project recruit survey/engineering firm to survey and produce maps delineated identifying land parcels	Project
		The project recruits individual consultants to prepare land title documentation.	Project
3	Mapping	The firm surveys and maps delineated land parcels.	Supervised by the Titling Teams
4	Concurrence	Village authorities and WUGs agree in writing that the maps prepared are accurate and that there are no unresolved disputes.	Supervised by the Titling Teams
5	Land title documentation	<p>Consultant:</p> <ul style="list-style-type: none"> a.) prepares for each member of the WUG the documentation needed to apply for land title; and 	Supervised by the Titling Teams

Item	Stage	Inputs	Source
		b.) advises the WUG member on how to apply.	
6	Application	WUG member proceeds to apply for land title	Project monitors and records outcome.
7	Costs	Calculation by land title: 1.) 5,600ha. 2.) Average plot size 1.5ha/family 3.) No of plots = $5,600\text{ha} / 1.5\text{ ha/plot}$ = 3,733 plots 4.) Average registration cost = \$50/plot 5.) Total cost = $\$50/\text{plot} * 3,733\text{plots}$ = \$187,000	