

Project Administration Manual

Project Number: 48409-003
Loan and Grant Numbers: LXXXX, GXXXX
August 2018

The Republic of the Union of Myanmar: Climate-Friendly Agribusiness Value Chains Sector Project

ABBREVIATIONS

ADB	-	Asian Development Bank
ADFS	-	agricultural digital finance service
CDZ	-	central dry zone
CSA	-	climate smart agriculture
DALMS	-	Department of Agricultural Land Management and Statistics
DMF	-	design and monitoring framework
DOA	-	Department of Agriculture
DOP	-	Department of Planning
DRD	-	Department of Rural Development
EARF	-	environmental assessment and review framework
EGDF	-	ethnic group development framework
EMP	-	environmental management plan
GAP	-	Good Agricultural Practices / gender action plan
GAFSF	-	Global Agriculture and Food Security Programme
IEE	-	initial environmental examination
IWUMD	-	Irrigation and Water Utilization Management Department
LARF	-	Land Acquisition and Resettlement Framework
LARP	-	Land Acquisition and Resettlement Plan
MOALI	-	Ministry of Agriculture, Livestock and Irrigation
MOC	-	Ministry of Commerce
MOPF	-	Ministry of Planning and Finance
MTPO	-	Myanmar Trade Promotion Organization
NCB	-	national competitive bidding
PIC	-	project implementation consultants
PMU	-	project management unit
PPMS	-	project performance management system
PSC	-	project steering committee
SOE	-	statement of expenditure

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 policies and procedures of the government and Asian Development Bank (ADB). 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, Livestock and Irrigation (MOALI) and its departments at national and regional levels, in coordination with the Ministry of Planning of Finance (MOPF) and the Ministry of Commerce (MOC), are wholly responsible for the implementation of the project, as agreed jointly between the borrower and ADB, and in accordance with the policies and procedures of the government and ADB. ADB staff is responsible for supporting implementation, including compliance by MOALI, MOPF, and MOC of their obligations and responsibilities for project implementation, in accordance with ADB's policies and procedures.

At loan and grant negotiations, the borrower and ADB shall agree to the PAM and ensure consistency with the loan and grant agreements. Such agreements shall be reflected in the minutes of the loan negotiations. In the event of any discrepancy or contradiction between the PAM and the loan and grant agreements, the provisions of the loan and grant agreements 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.

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I. PROJECT DESCRIPTION

A. Rationale

1. Agriculture sector in Myanmar accounted for 30% of gross domestic product, 60% of employment, 29% of value addition, and 23% of exports in 2016 (including \$1.1 billion in pulses alone).¹ It is considered the second largest contributor to future growth of Myanmar. Rice, pulse, bean and oilseed sub-sectors are important due to their potential for job creation, contribution to gross domestic product, and export. Of the total national production, the central dry zone (CDZ) produces 25% of rice, 48% of pulses and 89% of sesame. The potential for developing the value chains for these crops is significant.

2. The Climate-Friendly Agribusiness Value Chains Sector Project supports implementing the government's Agriculture Development Strategy (ADS), 2018-2023 and the National Export Strategy, 2015-2019 by boosting competitiveness in value chains for rice, beans, pulses, and oilseeds in the Magway, Mandalay, and Sagaing regions in the CDZ.² The project will increase climate resilience for critical rural infrastructure, promote quality and safety testing capacity, strengthen technical and institutional capacity for climate smart agriculture (CSA), and create an enabling policy environment for climate-friendly agribusinesses. The project will reduce food insecurity and rural poverty, increase smallholders' incomes and access to markets, and improve resource efficiency and environmental sustainability for agribusinesses.

B. Impact and Outcome

3. The project aims to create an enabling environment that reduces the incidence of poverty, malnutrition, and food insecurity among the rural poor. The project is aligned with the following impact: agricultural competitiveness improved.³ The project will have the following outcome: productive and resource-efficient agribusiness value chains in project areas developed.⁴

C. Outputs⁵

4. **Output 1: Critical agribusiness value chain infrastructure improved and made climate-resilient.** This output involves improving infrastructure to increase crop productivity and diversification, and boost agricultural product quality and safety. Key activities include:

- (i) upgrading infrastructure (irrigation, farm roads, buildings, farm machinery, post-harvest equipment, seed testing equipment, and agrometeorological stations) in 10 Department of Agriculture (DOA) seed farms for producing improved climate-resilient seed of rice, beans, pulses, and oilseeds;
- (ii) rehabilitating tertiary canals and community reservoirs, and constructing shallow tube wells (with some linked to drip and sprinkler technologies) to bring an additional 13,000 hectares under irrigation to benefit up to 35,000 households;

¹ The European Chamber of Commerce in Myanmar. 2017. *Myanmar: Agriculture Guide 2018*. Yangon.

² Government of Myanmar, Ministry of Agriculture, Livestock and Irrigation. 2018. *Myanmar Agriculture Development Strategy and Investment Plan (2018-2023)*. Nay Pyi Taw; and Government of Myanmar. Ministry of Commerce. 2014. *National Export Strategy (2015-2019)*. Nay Pyi Taw.

³ The impact is reflected through enhanced productivity, climate resilience, quality and safety, value addition and rural household incomes.

⁴ The design and monitoring framework is detailed in Section IXA.

⁵ The detailed implementation procedures are in Appendix 1.

- (iii) rehabilitating farm roads to climate-resilient condition for improved connectivity to markets and for farm mechanization; and
- (iv) upgrading the safety and quality testing equipment and instrumentation in MOALI Plant Protection Division's Pesticide Testing Laboratory and Food Safety Testing Laboratory, and the Ministry of Commerce Commodity Testing and Quality Management Laboratory to meet ISO 17025 standards, and providing rapid food safety testing kits to DOA and the private sector.

5. **Output 2: Climate-smart agriculture⁷ and agribusiness promoted.** This output will enhance capacity to integrate climate change concerns into agriculture and train farmers and agribusinesses in post-harvest crop handling to improve quality and market access, value addition, and contract harvesting. Key activities include:

- (i) deploying climate-resilient varieties of rice, beans, pulses, and oilseeds;
- (ii) strengthening capacity of seed growers, agro-dealers, and government staff regarding GAPs, CSA, certified seed production, and farm mechanization, and of agribusinesses regarding business plan development, good manufacturing practices, value addition, and improvement of food quality and safety; and
- (iii) facilitating access to inputs (seeds, quality agrochemicals), farm mechanization services, and off-farm rural livelihood opportunities by establishing an agricultural digital finance service to benefit at least 35,000 smallholders.

6. **Output 3: Enabling environment for climate-friendly agribusiness enhanced.** The project will support MOALI and the Ministry of Commerce in crafting policies to promote private sector investments and expand access to high-end markets such as Japan. Key activities include:

- (i) establishing an agribusiness policy cell within MOALI's Department of Planning for research and advocacy on policies related to land management, contract farming, tenure security, public-private partnerships, and on harmonization of quality and safety standards;
- (ii) raising awareness and capacity of financial institutions to support climate-friendly agribusinesses;
- (iii) enhancing weather, market, and credit information networks; and
- (iv) improving delivery of land administration services in townships by building capacity in participatory land management.

⁷ FAO defines climate smart agriculture (CSA) as agriculture that sustainably increases productivity, enhances climate resilience (adaptation), reduces/removes greenhouse gas emissions (mitigation), and promotes achievement of national food security and development goals.

II. IMPLEMENTATION PLANS

A. Project Readiness Activities

Table 1: Indicative Project Readiness Activities

Indicative Activities	2018							2019	Responsible Agency
	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
Establish program implementation arrangements	■								MOALI
Loan Negotiations			■						ADB/MOALI/MOPF
ADB Board approval				■					ADB
Loan and Grant signing						■			ADB/ MOPF
Government legal opinion provided							■		MOPF
Loan and Grant effectiveness								■	ADB

ADB = Asian Development Bank; MOALI = Ministry of Agriculture, Livestock and Irrigation; MOPF = Ministry of Planning and Finance; PIC = project implementation consultants.

Source: Asian Development Bank estimates.

B. Overall Project Implementation Plan

7. Project implementation key activities are presented in the Table 2. This will be updated annually and submitted to ADB with contract and disbursement projections for the following year.

Table 2: Overall Implementation Plan

Output and Activities	Responsible Agency(ies)	2018	2019				2020				2021				2022				2023				2024				2025				2026
		Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Project Start-up Period																															
Establishment and Staffing of PMU, NPSC, and RPIUs and TPIUs	MOALI																														
Start-up Specialists recruitment and mobilization	MOALI/ PMU																														
PIC firm recruitment and mobilization	PMU (DOA)																														
PPMS set-up	PMU (DOA)																														
FSDD firm recruitment and mobilization	PMU (DOA)																														
Output 1: Critical agribusiness value chain infrastructure improved and made climate resilient																															
Activity 1.1: Upgrading infrastructure in ten Department of Agriculture (DOA) seed farms for production of improved and climate resilient seed																															
Preparation of procurement documents, tendering and contracting for Chepa Seed Farm	DOA-SD/ PMU/DOA																														
Installation of equipment and civil works at Chepa Seed Farm	DOA-SD/ PMU/DOA																														
Preparation of specifications, procurement documents, tendering and contracting for other seed farms	DOA-SD/ PMU/DOA																														
Installation of equipment, civil works and establish management systems for O&M	DOA-SD/ PMU/DOA																														
Activity 1.2: Rehabilitating irrigation and water management infrastructure (tertiary canals, community reservoirs, and shallow tube wells) to climate resilient condition																															
a. Rehabilitation of tertiary canals and community reservoirs																															
Confirm implementation plans for rehabilitating critical infrastructure, land availability, locations, suitability and connectivity	PMU/IWUMD/DOA																														
Preparation of procurement documents, tendering, contracting and civil works for representative subproject (Kunn Village, Pakokku)	PMU																														
Final selection and design of additional schemes	IWUMD/FSDD																														
Preparation of procurement documents, tendering, contracting and civil works, and establishment of O&M	PMU/IWUMD/DOA																														
b. Installation of shallow tubewells																															
Confirm implementation plans for installing tube wells, land availability, locations, and suitability	IWUMD/PMU																														
Preparation of TOR and procurement docs, tendering, contracting and implementation of groundwater survey	PMU/IWUMD																														
Selection of and disbursement of funds to beneficiaries	IWUMD/PMU																														
Drilling and installation	Contractors																														
Establish management systems for O&M	PMU/ DOA																														
Activity 1.3: Improving connectivity and farm mechanization through climate resilient farm road networks																															
Selection, survey and design of roads	DRD																														
Bid preparation, tendering, contracting and construction	DRD/PMU																														
Establish management systems for O&M	PMU/ DOA/DRD																														
Activity 1.4: Strengthening infrastructure for agricultural quality and safety testing																															
a. Upgrading the MOALI – Plant Protection Division (PPD) Pesticide Testing Laboratory (PTL)																															
Reviewing and approving the list of equipment to be purchased	DOA-PPD																														
Bid preparation, tendering, contracting and installation of equipment	DOA-PPD/PMU																														
b. Upgrading the MOALI - PPD Food Safety Testing Lab (FSTLAB)																															
Reviewing and approving the list of equipment to be purchased	DOA-PPD																														
Bid preparation, tendering, contracting and installation of equipment	DOA-PPD/PMU																														

[illegible]

Output and Activities	Responsible Agency(ies)	2018	2019				2020				2021				2022				2023				2024				2025				2026	
		Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Establish a training programme for agro-input dealers and farmers	DOA-PPD and LUD																															
Facilitate soil testing and optimized fertilizer application	DOA-PPD and LUD																															
Develop or improve existing guidelines on fertilizer use and integrated pest management in selected crops	DOA-PPD and LUD																															
Produce videos on fertilizer and agrochemical usage and train extension agents and lead farmers on the use of those videos	DOA-PPD and LUD																															
(ii) Farm mechanization services																																
Identify leading suppliers of mechanization equipment who qualify to participate in the ADFS	DOA-ED/ AMD																															
Identify suitable mechanization options for farm and post-harvest operations and female headed households	DOA-ED/ AMD																															
Organise private sector and DOA-ED / AMD mechanization demonstrations on lead farmers' fields	DOA-ED / AMD) / Private sector																															
Assess demand for machinery operation and repair skills and organize training programs	DOA-ED / AMD) / Private sector																															
(iii) Off-farm rural livelihood opportunities																																
Identify entrepreneur households seeking off-farm opportunities and who qualify to participate in the ADFS	DRD																															
Train entrepreneur households seeking off-farm opportunities and encourage them to access ADFS	DRD																															
Output 3: Enabling environment for climate friendly agribusiness enhanced																																
Activity 3.1: Establishing an agribusiness policy unit within MOAL's Department of Planning (DOP) to formulate agribusiness policies and standards																																
Establish agribusiness policy unit	DOP																															
Develop work plan for policy formulation, analysis, and advocacy focusing on land use and management, contract farming, tenure security, public-private partnerships, and on harmonization of quality and safety standards	DOP																															
Formulate climate friendly and gender-sensitive agribusiness policies focusing on PPPs and contract farming arrangements	DOP/DOA/PMU																															
Organize public-private forums to raise awareness on climate friendly agribusiness policies and standards, including organic certification, GMP and HACCP standards	DOP and MyanTrade																															
Activity 3.2: Raising awareness and capacity of financial institutions to support climate friendly agribusinesses																																
Develop environmental and climate screening criteria and tools to guide lending activities of financial institutions	PIC/PMU																															
Build capacity of financial institutions for evaluating loans against these environmental and climate risk screening criteria	PIC/PMU																															
Training on green finance, climate risk sharing instruments and structuring of PPPs	PIC/PMU																															
Activity 3.3: Enhancing weather, market and credit information networks																																
Support existing weather, market and credit information systems to expand their services	DOP/PMU/and other IAs																															
Provide multimedia-based weather, market and credit information services to farmers and agribusinesses	DOP/PMU/and other IAs																															
Activity 3.4: Improving the delivery of land administration services																																
(i) Capacity building of DALMS, regional and township administrations for land management planning																																
Procurement of RapidEye 5m resolution satellite imagery	PMU																															
Present participatory land use mapping for target townships	DALMS and LUD																															
Fit for purpose information compilation into a GIS database	DALMS																															
Establish township crop suitability for on and off-season production	DALMS and LUD																															
Produce township land management plans	DALMS																															

Output and Activities	Responsible Agency(ies)	2018	2019				2020				2021				2022				2023				2024				2025				2026
		Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
(ii) Capacity building of township administrations to deliver land administration/management services																															
Capacity building to validate, strategize and implement participatory township land management plans produced at the national level	DALMS																														
Training in techniques to handle routine and new land administration tasks and land use planning, work ethics, and relationship with clients, land dispute management;	DALMS																														
Digitizing maps and satellite imagery to targeted Village Tracts	DALMS																														
Complete/update map coverage	DALMS																														
(iii) Creating demand for land administration services at village level																															
Awareness raising, sensitization and training on available land administration/management services and procedures	PMU/DALMS																														
Development of participatory village land management plans to strategize and demand services	PMU/DALMS																														
Delivery of services such as land certification, recording land lease contracts and land use changes, land dispute management, identification of land for possible allocation to the landless and poorer households, including women.	PMU/DALMS																														
Project Management Cross-Cutting Activities																															
Environment management plan key activities																															
Gender action plan key activities																															
Inception Report																															
Communication strategy key activities																															
Project Review																															
Midterm Report																															
Project completion report																															
Financial Closing																															

ADFS = Agricultural Digital Finance Service; AMD = Agriculture Mechanization Department; CSA = climate smart agriculture; DALMS = Department of Agricultural Land Management Services; DOA = Department of Agriculture; DAR = Department of Agricultural Research; DRD = Department of Rural Development; DOP = Department of Planning; ED = extension department; FI = financial institution; FFS = farmer field school; FSDD = feasibility study and detailed design; FSP = financial service provider; ICT = information and communication technologies; IWUMD = Irrigation and Water Utilization Management Department; LUD = Land Use Department; MOALI = Ministry of Agriculture, Livestock and Irrigation; MOC = Ministry of Commerce; MyanTrade = Myanmar Trade Promotion Organization; O&M = operation and maintenance; PIC = project implementation consultants; PMU = Project Management Unit; PPD = Plant Protection Department; PPP = public-private partnership; SD = Seed Department.

Source: Asian Development Bank

III. PROJECT MANAGEMENT ARRANGEMENTS

A. Project Implementation Organizations: Roles and Responsibilities

Project Implementation Organizations	Management Roles and Responsibilities
Ministry of Planning and Finance (MOPF)	<ul style="list-style-type: none"> (i) fulfill government fiduciary and financial management oversight for fund flows; (ii) allocate and release counterpart funds in a timely basis; (iii) ensure sufficient counterpart support for project activities in a timely manner in coordination with MOALI; and (iv) ensure that delays are not encountered in procurement and recruitment.
Project Steering Committee	<p>A project steering committee (PSC) chaired by the Minister or Deputy Minister of MOALI, and co-chaired by the Ministers of Agriculture of Magway, Mandalay and Sagaing regions of the CDZ will serve as steering committee for the project to provide oversight and policy guidance. The PSC will comprise representatives (at the level of Director General or above) of DOA, DOP, DAR, DRD, IWUMD, and DALMS from MOALI and of MOPF, MOC, MOI and MONREC. Other ministries may be invited as observers when specific issues of their concern are for discussion. The PSC will:</p> <ul style="list-style-type: none"> (i) ensure interagency cooperation at national level; (ii) review and advise on policy issues and implementation constraints; (iii) ensure integration with other donors and government related development activities; (iv) meet at least twice a year and monitor implementation progress; (v) approve annual work plans and budgets; (vi) set up a multi-departmental procurement committee for the project to evaluate tenders; and (vii) provide overall guidance on project implementation.
Ministry of Agriculture, Livestock and Irrigation (MOALI), executing agency	<ul style="list-style-type: none"> (i) primarily responsible for overall coordination and financial management of the project, in close coordination with MOPF and MOC; (ii) set up a PMU in Naypyidaw, and PIUs in the regional offices in Magway, Sagaing, and Mandalay, and in the 14 project townships; (iii) delegate sufficient powers to the PMU and PIU team members to operate their affairs with minimum disruption and interference; (iv) recruit qualified PMU and PIU staff to avoid frequent staff turnover during the whole project implementation period; (v) ensure that selection criteria and implementation arrangements of the project activities complies with the financing agreements and manage the associated fiduciary risk; (vi) ensure that delays are not encountered in procurement and recruitment; (vii) ensure full safeguards compliance; (viii) through PMU and PIUs, monitor the project performance and submit project reports to the concerned parties; and (ix) ensure all implementing agencies are actively participating in the project as per their designated roles and responsibilities.
Project Management Unit (PMU) in MOALI	<p>The implementing agencies (IAs) will be supported by the PMU at central level and project implementation units (PIUs) at regional and township level.</p>

Project Implementation Organizations	Management Roles and Responsibilities
	<p>Located in MOALI central office in Naypyidaw, PMU will be led by a Project Director, seconded from MOALI and devoting approximately 50% of his/her time to the project. S/he will be assisted by full-time seconded staff including a project manager, financial officer, procurement officer, M&E officer, social and environment safeguard officer and administrative officer. The PMU will:</p> <ul style="list-style-type: none"> (i) facilitate the set up of regional project implementation units (PIUs) in the regional MOALI offices in Magway, Sagaing, and Mandalay, and in the 14 project townships, and provide guidance to them; (ii) oversee day-to-day implementation of the project by supporting IAs at the national level and ensure coordination between activities and components; (iii) establish two advance accounts (one each for ADB loan and GAFSP Grant) and 10 sub-accounts (one each for ADB loan and GAFSP Grant in each of five IAs: DOA, DRD, DALMS, IWUMD and MTPO) to be used exclusively for ADB's eligible expenditures; (iv) prepare and send withdrawal applications to ADB; (v) manage disbursement applications (to subaccounts in DOA, DRD, DALMS, IWUMD and MTPO, and at regional and township PIU level) and maintain supporting documents; (vi) direct payment requests to ADB are duly certified by the project director based on the payment terms in the contracts; (vii) assist IAs in requesting budgetary allocations for counterpart funds; (viii) communicate with MOPF and ADB for any amendments in the allocation of the loan and grant amounts; (ix) recruit a firm for the annual audit of project accounts; (x) collate and consolidate planning, financial management, budgeting and procurement documents (including annual forecasts of contract awards and disbursements), and oversee adherence to these across the IAs; (xi) conduct monitoring and ensure full compliance of environmental and social safeguards, including the gender action plan, and provide guidance to the IAs on these; (xii) take the role of the project public complaints unit – effectively setting up a complaints log, so that complaints can then be responded in accordance with the grievance redress mechanism; (xiii) establish and implement a project performance management system - measure, monitor and evaluate the performance in delivering development impact against established performance targets and goals of the project; (xiv) report to PSC and ADB on the project implementation progress (including preparation of semi-annual, annual and project completion reports); (xv) procure goods, works and services, including recruitment of consultants; (xvi) sign and manage supplier contracts in coordination with IAs; (xvii) oversee preparation of feasibility studies and detailed designs undertaken by IAs/PIUs with project implementation consultants (PIC) support; and (xviii) make contractor payments based on milestone payment approvals from PIU level.

Project Implementation Organizations	Management Roles and Responsibilities
<ul style="list-style-type: none"> a. Department of Agriculture (DOA) of MOALI b. Department of Planning (DOP) of MOALI c. Irrigation and Water Utilization Management Department (IWUMD) of MOALI d. Department of Rural Development (DRD) of MOALI e. Department of Agricultural Land Management and Statistics (DALMS) in MOALI f. Myanmar Trade Promotion Organization (MyanTrade) of MOC 	<p>Each IA will have a project coordination unit (PCU) to be represented by a seconded Project Coordinator as well as procurement and finance officers at the national level departments. The PCU will coordinate and oversee the work at the national, regional and township levels. In broad terms, the responsibilities of the IAs are to:</p> <ul style="list-style-type: none"> (i) prepare work plans and budgets, and implement the project activities within their Department on a day-to-day basis; (ii) establish and manage the subaccount, and organize disbursement with assistance from PMU; (iii) oversee financial management activities and prepare procurement plans including preparation of annual forecasts of contract awards and disbursements; (iv) assist the PMU (and RPIUs and TPIUs where applicable) in the procurement of goods, works and services through the provision of technical documentation and information required for bidding documents (specifications, etc); (v) monitor and report on project activities, providing information to be collected as part of the PPMS, managed by the M&E officer in the PMU; and (vi) conduct monitoring and compliance of environmental and social safeguards, including gender action plan (based on training and guidance provided by PMU and PIC).
<p>(implementing agencies)</p>	<p>a. Department of Agriculture (DOA). Project responsibilities of DOA are divided among various divisions, including the Seed Division, Extension Division, Plant Protection Division, and Land Use Division.</p> <ul style="list-style-type: none"> • DOA Seed Division (SD) <ul style="list-style-type: none"> (i) review and approve 10 DOA seed farms technical designs, bidding documents, and tenders, supervise the construction, evaluate construction for quality control, and approve payments for meeting the milestones. Procurement of goods, works and services for the seed farms will be done by the PMU. Evaluation will be done by a bid evaluation committee set up by PMU, which should include DOA and seed division representatives; (ii) organize, with support from PIC sector specialists, technical training and guidance in water management and water use efficiency, GAP, GSP, GMP and other relevant techniques; and (iii) Coordinate and work closely with the Department of Agricultural Research (DAR) in planning the seed flow and the multiplication of the various classes of seed, in distributing the foundation seed based on the DAR resources and the needs of the DOA seed farms. • DOA Extension Division (ED) <ul style="list-style-type: none"> (i) select the lead seed growers and their associated farmer groups that will be eligible for the TOT training in seed production and certification, CSA, and codes of practice for drying and storage; (ii) organize and serve as technical trainers at the project-supported Farmer Field Schools and the on-farm demonstrations; and (iii) coordinate training on mechanization and machinery operation and repair.

Project Implementation Organizations	Management Roles and Responsibilities
	<ul style="list-style-type: none"> • DOA Plant Protection Division (PPD) <ul style="list-style-type: none"> (i) review and approve the list of laboratory equipment to be purchased for PPD's Pesticide Testing Laboratory (PTL) and the Food Safety Laboratory (FSTLAB); (ii) utilize the new PTL equipment in testing of pesticides to be registered before being marketed; (iii) utilize the new equipment in the FSTLAB to measure pesticide residue for trace analysis in agricultural commodities; and (iv) facilitate access to pesticides. • DOA Land Use Division (LUD) <ul style="list-style-type: none"> (i) facilitate access to fertilizers; and (ii) undertake land management planning (with DALMS). <p>b. Department of Planning (DOP)</p> <ul style="list-style-type: none"> (i) support the establishment of the Agribusiness Policy Unit; (ii) assist in the recruitment of the Director and the two research officers; (iii) support the systematic policy research, analysis, and advocacy work in various policy topics; (iv) assist in the dissemination of the project's adopted policy reforms among the project's value chain stakeholders; and (v) implement the market information network activity. <p>c. Irrigation and Water Utilization Management Department (IWUMD)</p> <ul style="list-style-type: none"> (i) with assistance from PIC and the PIU regional engineers, undertake feasibility and detailed designs for rehabilitation and upgrading of selected minor canals and community ponds and reservoirs; (ii) assist PMU in the procurement of goods, works and services through the provision of technical documentation and information required for bidding documents (specifications, etc); (iii) undertake construction supervision and approve payments for meeting milestones; (iv) together with the PIC irrigation engineer, provide technical training and guidance in water management, water use efficiency and maintenance of the renovated minor canals, new tube wells, and rehabilitated small reservoirs; (v) help establish Water User Groups (WUGs) for the farmers accessing water from the project's improved irrigation works; (vi) help prepare a TOR for a groundwater survey and help oversee the work; and (vii) coordinate with DRD in selecting beneficiaries and determining needs for tube wells. <p>d. Department of Rural Development (DRD)</p> <ul style="list-style-type: none"> (i) with assistance from PIC and PIU regional engineers, undertake feasibility and detailed designs for farmer feeder roads; (ii) assist PMU in the procurement of goods, works and services through the provision of technical documentation and information required for bidding documents (specifications, etc); (iii) undertake construction supervision and approve payments for meeting milestones; and (iv) manage the Agricultural Digital Finance Service.

Project Implementation Organizations	Management Roles and Responsibilities
	<p>e. Department of Agricultural Land Management and Statistics (DALMS)</p> <ul style="list-style-type: none"> (i) undertake land management planning; and (ii) deliver improved land administration/management services. <p>f. Myanmar Trade Promotion Organization (MyanTrade), Ministry of Commerce</p> <ul style="list-style-type: none"> (i) implement training programs in food safety (GMP, HACCP) involving the primary and value added processed pulse, beans, and sesame; (ii) train value chain stakeholders in product branding and market promotion; and (iii) work with the Department of Consumer Affairs to upgrade the Commodity Testing and Quality Management Laboratory (CTQM). Specifications have been prepared by CTQM professional staff which the PMU will review (with PIC support) before bidding documents are finalized.
Other collaborating government agencies	<p>Agricultural Mechanization Department (AMD) - support to DOA-ED on mechanization training.</p> <p>Department of Agricultural Research - work with the DOA-SD in planning the seed flow and the multiplication of the various classes of seed, in distributing the foundation seed based on the DAR resources and the needs of the DOA seed farms.</p> <p>General Administration Department (GAD) - support to awareness raising of land administration services.</p> <p>Department of Consumer Affairs, MOC - working with the MTPO, upgrade the Commodity Testing and Quality Management Laboratory (CTQM). Specifications have already been prepared by CTQM professional staff which will be reviewed by the PMU (with PIC support) before bidding documents are finalized.</p> <p>Department of Rural Roads Development (DRRD), Ministry of Construction - support the DRD as needed in the farm feeder roads activities.</p> <p>Ministry of Education - DOA will also work closely with the Intellectual Property Division of the Science and Technology Department of the Ministry of Education in registering Shwebo Paw San rice as a geographic indication (GI), getting a trademark for it, and pursuing any additional geographic indication requirements, legal or otherwise.</p>
Ministry of Commerce (MOC) Project Coordination Unit	<ul style="list-style-type: none"> (i) responsible for overall implementation of MOC-related project activities and financial management, in close coordination with MOALI and PMU; (ii) set up a PCU in MTPO and assign a seconded Project Coordinator expected to dedicate approximately 25% of his/her time to the project, as well as a seconded finance and administration officer to manage the subaccount withdrawals and expenditure; (iii) delegate sufficient powers to the PCU and PIU team members to operate their affairs with minimum disruption and interference; (iv) recruit qualified PCU and PIU staff to avoid frequent staff turnover during the whole project implementation period;

Project Implementation Organizations	Management Roles and Responsibilities
	<p>(v) ensure that selection criteria and implementation arrangements of the project activities complies with the financing agreements and manage the associated fiduciary risk; and</p> <p>(vi) Through PCU, monitor the project performance and submit project reports to the concerned parties. Support to the office will be provided by the PMU.</p>
Regional Project Implementing Units (RPIUs)	<p>The IAs will be supported by a regional PIU located in the regional office of MOALI and will include two externally contracted staff – a design and supervision engineer and an agriculturalist. They will provide support to government IA staff at the township (and regional) level involved in the implementation of activities.</p> <p>The RPIU will include government seconded staff, including a finance and admin officer, and project coordinators representing DOA (with the DOA Director acting as the RPIU Head), IWUMD, DRD and DALMS (deputy director level). They will support regional IAs in:</p> <ul style="list-style-type: none"> (i) conducting regional level activities (e.g. organizing venues for project training, meetings, etc); (ii) coordinating the work of the TPIUs; (iii) keeping the regional and district government officials aware of project activities and requesting their support as required. The RPIUs will report to the PMU and will support implementation of the PPMS and ensure safeguards implementation; (iv) a subaccount will be opened, if necessary, at regional PIU level. The RPIU head will be accountable for proper use of advances and reconciliation of the subaccount. This is likely to be limited to small-scale expenditures such as through the shopping mechanism (following training provided by PMU procurement staff) with all national competitive bids managed by the PMU; and (v) the regional MOC office may also be involved in the training programs in food safety (GMP, HACCP) involving the primary and value added processed pulse, beans, and sesame, or such training staff may come directly from central level.
Township Project Implementing Units (TPIUs)	<p>At township level, the IAs will be supported by a township PIU located in the General Admin Office of the Township building. The TPIU is composed of the following seconded IA representatives:</p> <ul style="list-style-type: none"> • Project coordinators representing DOA (who will act as the PIU head), IWUMD, DRD and DALMS • From DOA, 2 agriculturalists • From the IWUMD, 3 irrigation engineers, plus a water use efficiency officer • From DRD, a road engineer • From DALMS, a land administration officer • Finance and admin officer <p>The TPIUs will:</p> <ul style="list-style-type: none"> (i) oversee the implementation of field-level activities, keeping the township government officials aware of project activities and requesting their support as required; (ii) report to the RPIUs and support implementation of the PPMS and ensure safeguards are implemented; (iii) A subaccount will be opened, if necessary, at township PIU level. The TPIU head will be accountable for proper use of advances and

Project Implementation Organizations	Management Roles and Responsibilities
	<p>reconciliation of the subaccount. This is likely to be limited to small-scale expenditures such as through the shopping mechanism (following training provided by PMU procurement staff) with all national competitive bids managed by the PMU; and</p> <p>(iv) The township MOC office may also be involved in assisting in the training programs in food safety (GMP, HACCP) involving the primary and value added processed pulse, beans, and sesame, or such training staff may come directly from central level. Either way, it is unlikely that a separate regional PIU for MOC will be required.</p>
Regional, District, and Township Governments	<p>The Regional, District and Township Government officials are responsible for:</p> <p>(i) providing regulatory support (e.g. in approval and registration processes) to project stakeholders in an efficient and effective manner; and</p> <p>(ii) helping in the subproject selection process e.g. for minor canals to be renovated in the various irrigation scheme locations in the three regions.</p>
Asian Development Bank	<p>(i) ensure timely release of funds from ADB to the project;</p> <p>(ii) issue no-objection for subproject feasibility studies for financing;</p> <p>(iii) monitor project implementation arrangements, disbursement, procurement, consultant selection, and reporting;</p> <p>(iv) monitor schedules of activities;</p> <p>(v) review compliance with agreed procurement procedures;</p> <p>(vi) review compliance with loan and grant covenants;</p> <p>(vii) monitor effectiveness of safeguard procedures and ensure full safeguards compliance;</p> <p>(viii) monitor conformity with ADB anti-corruption policies; and</p> <p>(ix) undertake periodic review missions with the government (including inception, midterm and project completion)</p>

ADB = Asian Development Bank; AMD = Agricultural Mechanization Division; CDZ = central dry zone; CSA = climate smart agriculture; CTQM = commodity testing and quality management; DALMS = Department of Agricultural Land Management and Statistics; DAR = Department of Agricultural Research; DOA = Department of Agriculture; DMF = design & monitoring framework; DOP = Department of Planning; DRD = Department of Rural Development; EA = executing agency; ED = extension division; FSTLAB = Food Safety Testing Laboratory; GAD = General Administration Department; GAP = good agricultural practices; GHP = good hygienic practices; GMP = good manufacturing practices; GSP = good storage practices; HACCP = hazard analysis critical control point; ICT = information and communication technologies; IWUMD = Irrigation and Water Utilization Management Department; LUD = Land Use Division; MOALI = Ministry of Agriculture, Livestock and Irrigation; MOC = Ministry of Commerce; MOE = Ministry of Education; MOI = Ministry of Industry; MONREC = Ministry of Natural Resources and Environmental Conservation; MOPF = Ministry of Planning and Finance; MTPO = Myanmar Trade Promotion Organization; M&E = monitoring and evaluation; PCU = project coordination unit; PIC = project implementation consultants; PMU = project management unit; PPD = Plant Protection Division; PSC = project steering committee; PTL = Pesticide Testing Laboratory; SD = Seed Division; TOT = training of trainers.

Source: Asian Development Bank.

Table 3: Roles of the Project Management Unit Staff

Position	Job Description	Qualification
National Project Director (part-time)	The Project Director reports to the PSC on the overall supervision and implementation of the project and ensures that the PSC and ADB are kept informed of project developments, issues and progress. The Project Director oversees and coordinates the work of PMU staff, and the recruitment and performance of international and national consultants, ensures budgets and work plans are approved and executed on time and on target, and supervises and approves all project activities and expenditures.	A senior government official with at least 12 years project management experience with preference to ADB project implementation. Master's degree or equivalent and competence in spoken and written English.
National Project Manager (PMU) / Project Coordinator of each IA	The Project Manager will ensure effective coordination among project stakeholders on implementation, administrative and finance aspects. The main duties involve preparing and implementing detailed annual work plans and budgets, coordinating all admin/finance/procurement, managing project account 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 requests of regional and township project implementation units for onward submission for approval of the Project Director and will liaise with the National Technical Departments/Focal points of MOALI and MTPO and will be supported by PIC.	A senior government official with at least 10 years project management experience A Master's degree or equivalent and competence in spoken and written English.
Finance Officer	The PMU Finance Officer oversees the day-to-day financial management of the project and, supported by the procurement officer and PIC international and national finance consultants, will (i) facilitate the establishment of the necessary accounts at the PMU, implementing agencies and the PIUs; (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 relevant PIU staff; (vii) provide ongoing training and coaching to PIU's as needed; and (viii) supervise the preparation of regular financial reports for transmission to the EA and the ADB.	A government official with formal accounting qualifications and at least 5 years previous experience in financial management of internationally financed projects, preferably projects financed by ADB or World Bank. Bachelor's degree or equivalent. Competence in spoken and written English.
Procurement Officer	The Procurement Officer, with support from the PIC international and national procurement consultants, undertakes the procurement activities as per the procurement plan and ensures all project 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
Safeguards Officer	The Environment, Safeguards, and Gender Officer supported by PIC will be responsible for ensuring implementation and monitoring of gender, social and environmental safeguards in accordance with ADB's SPS 2009. The Safeguards Officer will be responsible, with PIC support, for preparing safeguards documents and GAP for subprojects and preparing quarterly reports on safeguards compliance.	A degree in environment / social science and at least 3 years work experience in related field, preferably on internationally supported projects. Good command of spoken and written English.

Monitoring and Evaluation Officer	The M&E Officer ensures the project M&E system is established, updated, monitored, and reported.	At least 3 years previous experience working as M&E officer on ADB or internationally financed projects. Ability to use Microsoft programs and good English ability.
Administrative Officer	<p>The Administrative Officer provides logistical support to PMU operations as needed, frequently interacting with senior government officials, PIU staff members and the consultants and acts as an assistant to the Project Director.</p> <p>Providing planning and logistics support for the PMU offices and to the Regional Representatives, the Officer will plan, schedule, arrange meetings and project programs, coordinate activities with the public and private sector stakeholders in the project, and maintain a log of all logistics, meetings, etc.</p>	At least 3 years previous experience working on ADB or internationally financed projects. Ability to use Microsoft programs and good English language ability.

ADB = Asian Development Bank; MOALI = Ministry of Agriculture, Livestock and Irrigation; MTPO = Myanmar Trade Promotion Organization; PMU= Project Management Unit; PIU = project implementation unit; PIC = project implementation consultants.

Table 4: Roles of the Project Implementation Unit Staff

Position	Job Description	Requirements
Regional PIU Director	The Regional PIU Director oversees implementation of project activities at regional level. Main duties include leading preparation of the regional and township project work plans and budget, coordinating with related government agencies and development partners in the implementation of civil works subprojects and capacity building activities, ensuring compliance with policies and regulations, supervising and approving all project activities and PIU expenditures.	Regional Director DOA
Deputy Regional PIU Director	<p>The Deputy Director will ensure effective implementation of project activities in relation to water management rehabilitation activities and capacity building.</p> <p>Main duties include assisting PIU Regional Director in coordinating development of regional and township work plan and budget, coordinating with related government agencies and development partners in the implementation of civil works subprojects and capacity building activities, supervising and reviewing design engineers work and following up and monitoring field implementation, and consolidating and reporting project benefit monitoring and evaluation.</p> <p>S/he will be responsible for the monitoring and evaluation within the water management systems for social safeguards and social development as well as gender.</p>	Deputy Director from IWUMD
Finance and Administration Assistant	<p>The Finance and Administration Assistant reports to the PIU Director overseeing the establishment and monitoring the PIU accounting systems and procedures, tracks the use of project funds, and ensures that accurate, up-to-date financial accounting information is available</p> <p>S/he will provide administrative support to PIU office and to the regional representatives to plan, schedule, arrange meetings and project programs, coordinate activities with the public and private sector stakeholders in the project, and maintain a log of all logistics, meetings</p>	At least 2 years of experience as accountant on ADB or internationally financed projects. Ability to use accounting and word processing software. Working ability in English.

B. Key Persons Involved in Implementation

Ministry of Planning and Finance (MOPF)

Foreign Economic Relations Department	U Moh Moh Naing Director Tel: +95 67 407344
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Executing Agency

Ministry of Agriculture, Livestock and Irrigation (MOALI)	Project Director: U Aye Ko Ko, Deputy Director General, DOA Phone No: 09-428306725 Email: dydgdoda@gmail.com
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Project Manager:
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Email: director.extension.doa@gmail.com

Implementation Agencies

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Project Coordinator:
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MOALI – Department of Planning	U Kyaw Min Oo, Director General Tel: +95 67 410011
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Project Coordinator:
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thanda2010.kyi@gmail.com

MOALI – Irrigation and Management of Water Utilization Department	U Kyaw Myint Hlaing, Director General Tel: +95 67 410539
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Project Coordinator:
U Zaw Win Chit, Director
Phone No: 09-8301941; Email

MOALI – Department of Rural Development	U Khant Zaw, Director General Email: kzaw.dda@gmail.com
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Project Coordinator:
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MOALI – Department of Land
Administration and Statistics

U Thet Naing Oo
Director General

Project Coordinator:
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Ministry of Commerce (MOC)
- Myanmar Trade Promotion
Organization

U Aung Soe
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Project Director:
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MOC – Department of Consumer
Affairs

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Deputy Director
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Project Coordinator:
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Asian Development Bank

Environment, Natural
Resources, and Agriculture
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Principal Climate Change Specialist, SEER/SERD
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Confirmed Staff of the Project Management Unit (PMU)

Name/ Position/Department	Role
1. U Soe Moe Deputy Director, DOA, MOALI Phone No: 09-8302294;	Procurement Officer
2. Daw Htay Htay Oo Deputy Director, DOA, MOALI Phone No: 09-428304173 Email: directorfinance43@gmail.com	Finance Officer
3. Dr. Cho Cho San Program Officer, DOP, MOALI Phone:09-784084939 Email: cho.thirimon@gmail.com	Safeguards Officer and Gender focal
4. Daw Nwet Nwet San Program Officer, DOP, MOALI Phone: 09-43017178 Email: nwetnwet.san@gmail.com	Monitoring and Evaluation Officer
5. Daw Thida Swe Assistant Director, DOA, MOALI Phone:09-421171797	Administration Officer

C. Project Organization Structure

8. The Ministry of Agriculture, Livestock and Irrigation (MOALI) is the executing agency (EA), in close coordination with MOC and MOPF.

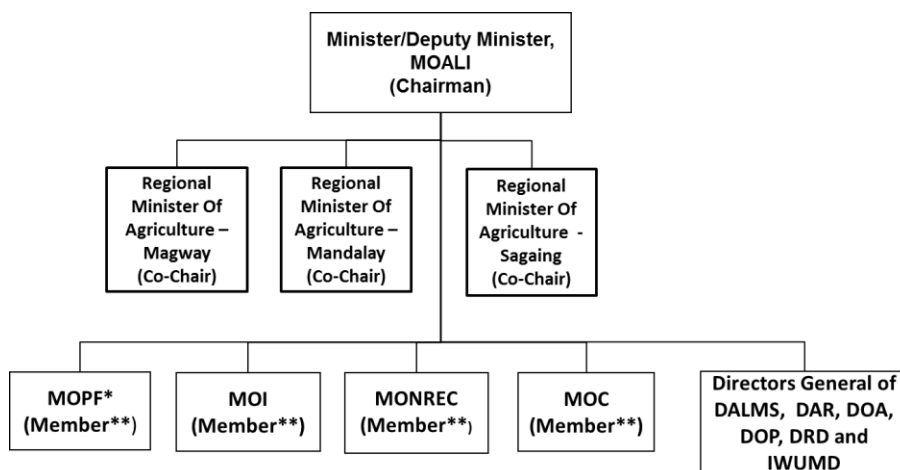
9. A Project Steering Committee (PSC) chaired by the Minister or Deputy Minister of MOALI, and co-chaired by the Ministers of Agriculture of Magway, Mandalay and Sagaing regions of the CDZ will provide oversight and policy guidance (Figure 1). The PSC will comprise representatives (at the level of Director General or above) of Department of Agriculture (DOA), Department of Agricultural Land Management and Statistics (DALMS), Department of Agricultural Research (DAR), Department of Planning (DOP), Department of Rural Development (DRD), and Irrigation and Water Utilization Management Department (IWUMD) from MOALI, and of the Ministry of Planning and Finance (MOPF), Ministry of Commerce (MOC), Ministry of Industry (MOI), and the Ministry of Natural Resources and Environmental Conservation (MONREC). Other ministries may be invited as observers when specific issues of their concern are for discussion. For more effective decision making, the persons attending should not exceed 20 people.

10. The implementing agencies (IAs) will be the DOA, DALMS, DOP, DRD, and IWUMD within MOALI, and the Myanmar Trade Promotion Organization (MTPO) in MOC. Each will have a Project Coordinator to ensure that the work delegated to their respective departments is being undertaken efficiently and effectively. They will be the main liaison points of the PMU.

11. The implementing agencies will be supported by PMU headed by a Project Director (a coordinating unit in MTPO will be set up rather than a separate PMU). The PMU will be in the MOALI central complex in Naypyidaw. At regional level, the IAs will be supported by RPIUs (see Figure 3) located in the offices of the regional ministers of agriculture in Magway, Sagaing, and Mandalay, and at township level PIUs in the general administrative office of the township building in the 14 selected townships. The overall project organization structure is in Figure 2.

12. The PMU and PIUs will be supported by the project implementation consultants (PIC) to be contracted by the project. Individual project start-up consultants will also be engaged to help MOALI. The consultants' terms of reference are provided in Appendix 5.

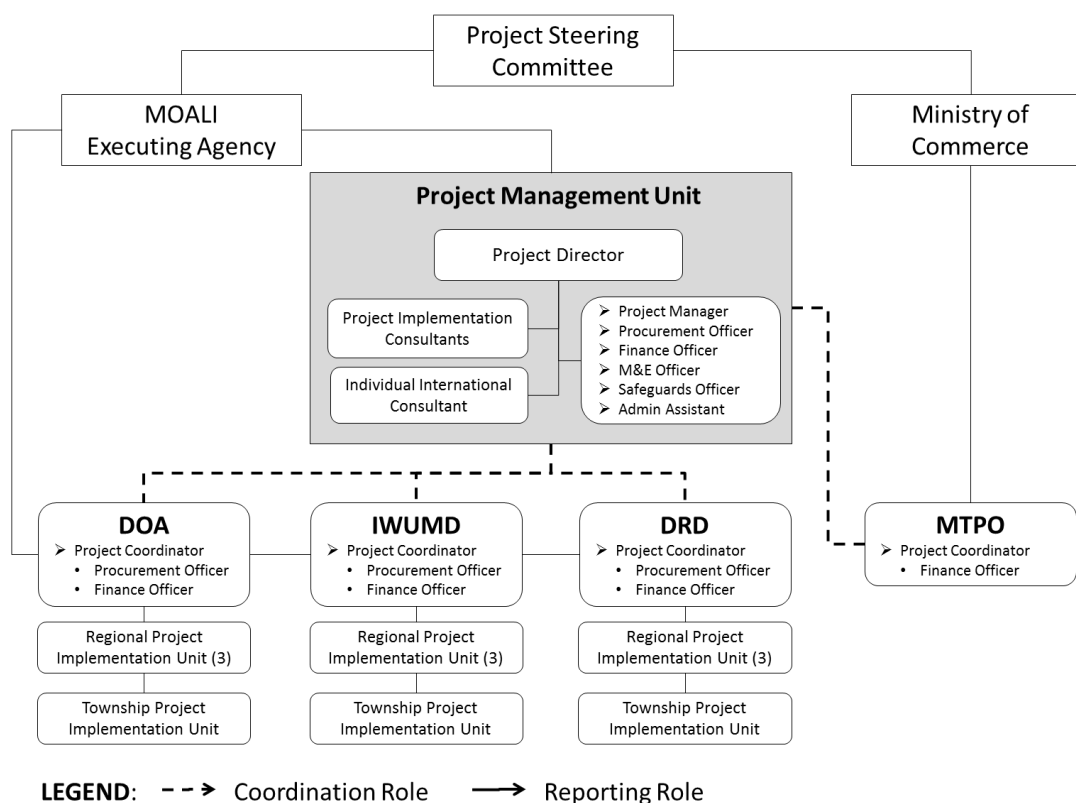
Figure 1: Project Steering Committee Composition



**** Members will be at the level of Director General or above**

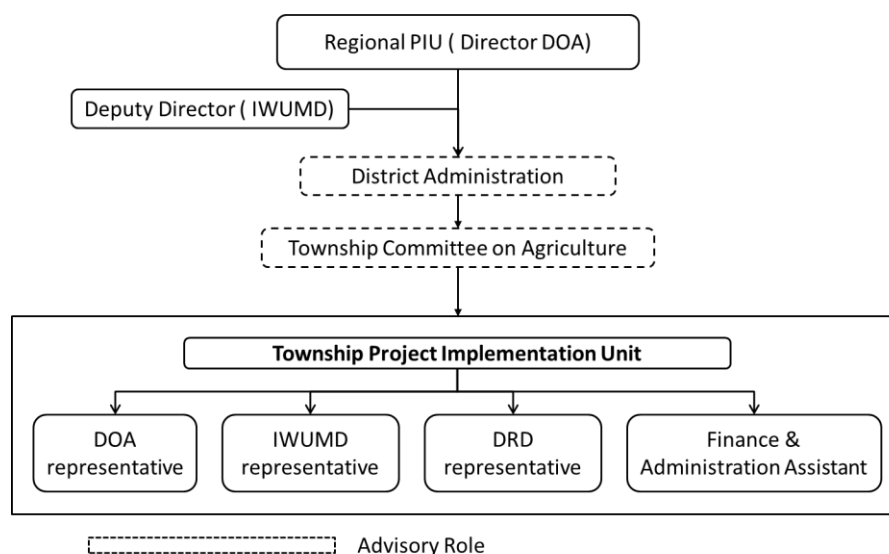
Note: Other ministries may be invited to attend as observers

Figure 2: Overall Project Organization Structure



*Project Coordinators (counterpart seconded staff) in each IA. Coordinate inputs to the project of technical staff within their department.

Figure 3: Regional and Township Project Implementation Unit (PIU) Structure



IV. COSTS AND FINANCING

13. The project is estimated to cost \$64.92 million. The government has requested a loan in the amount of \$40.50 million from ADB's concessional ordinary capital resources and a grant of \$22.00 million from the Global Agriculture and Food Security Program (GAFSP) to be administered by ADB on a cost-sharing basis.

14. The ADB loan will have a 32-year term, including a grace period of 8 years, an interest rate of 1.0% per annum during the grace period and 1.5% per annum thereafter, and such other terms and conditions set forth in the draft loan agreement.

15. The ADB loan and ADB-administered grant proceeds will finance (i) civil works; (ii) equipment and materials; (iii) studies, surveys and design; (iv) training and demonstration; (v) policies and standards; (vi) monitoring and evaluation; (vii) consulting services; (viii) information and communication technology; (ix) agriculture digital finance service; (x) operating costs; and (xi) taxes and duties.

16. The Government of Myanmar will finance the equivalent of \$1.43 million for salaries of counterpart staff and office space, inclusive of applicable taxes and duties. Contribution from beneficiaries of \$0.99 million for the tube well materials can be in-kind or in cash.

A. Cost Estimates Preparation and Revisions

17. The cost estimates were prepared by ADB consultants using data from primary and secondary sources. Figures are based on unit cost and rates prevailing in Myanmar in 2017. During implementation, project staff and consultants will revise the costs in accordance with the final detailed designs and will also be responsible for detailed costing of additional subprojects to be implemented. Tables may be revised during midterm review or special administration review mission.

B. Key Assumptions

18. The following key assumptions underpin the cost estimates and financing plan:

- (i) Exchange rate: MMK1,360 = \$1.00 (as of 31 Jan 2018).
- (ii) Price contingencies based on expected cumulative inflation over the implementation period are as follows:

Table 5: Escalation Rates for Price Contingency Calculation

Item	2018	2019	2020	2021	2022	2023	2024	2025	Average
Foreign rate of price inflation	1.5%	1.5%	1.5%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%
Domestic rate of price inflation	7.5%	7.5%	7.5%	8.0%	8.0%	8.0%	8.0%	8.0%	7.8%

Source(s): ADB Domestic Inflation Forecast April 2017, World Bank MUV Index, Oct 2017.

C. Detailed Cost Estimates by Expenditure Category

Table 6: Detailed Cost Estimates by Expenditure Category

Item	\$ Million		Total	% of Base Costs
	Local	Foreign		
A. Base Costs^{a,b,c}				
Civil Works	12.66	3.16	15.82	30.86
Machinery and Equipment	1.36	2.03	3.39	6.61
Shallow Tube wells	4.77	3.18	7.94	15.50
Materials and Supplies	3.16	1.35	4.51	8.80
Vehicles	0.10	0.22	0.32	0.63
Training, Workshops and Studies	2.80	0.70	3.50	6.83
Weather, Credit and Market Information Support	0.85	0.21	1.06	2.07
Consultants	2.57	2.12	4.70	9.16
Feasibility Studies and Detailed Design	0.66	0.16	0.82	1.60
Digital Finance Design and Management	0.80	0.20	1.00	1.95
Project Implementation Support	1.82	0.45	2.27	4.44
Government Counterpart Support	1.04	0.12	1.16	2.26
Agricultural Digital Finance Service	3.81	0.95	4.76	9.29
Subtotal (A)	36.38	14.87	51.25	100.00
B. Contingencies^d				
Physical	2.22	0.86	3.08	6.01
Price	6.83	2.40	9.23	18.00
Subtotal (B)	9.05	3.26	12.31	24.02
C. Financing Charges During Implementation^e				
Interest during construction	0.00	1.36	1.36	2.65
Subtotal (C)	0.00	1.36	1.36	2.65
Total Project Costs (A+B+C)	45.43	19.49	64.92	126.67

^a Figures may not sum due to rounding.

^b Includes taxes and duties of \$2.56 million to be financed by ADB loan and GAFSP grant.

^c In 1st quarter 2018 prices.

^d Physical contingencies computed at 10% for civil works and equipment, and 5% for the other expenditure categories. Price contingencies on foreign currency costs computed at 1.5% between 2018 and 2020, and 1.6% thereafter. Price contingencies on local currency costs computed at 7.5% between 2018 and 2020, and 8.0% thereafter. Includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

^e Interest during construction for the ADB loan is computed at 1% during the grace period.

Source. Asian Development Bank estimates.

D. Allocation and Withdrawal of Loan and Grant Proceeds**Table 7: Allocation of ADB Loan Proceeds**

No.	Expenditure Item	Total Amount Allocated for ADB Financing (\$)	Basis for Withdrawal from the Loan Account
1.	Civil Works, Machinery and Equipment, Feasibility and Design, and Project Implementation Support	34,490,000	100.0% of total expenditure claimed
2.	Training, Workshops and Studies	2,010,000	45.0% of total expenditure claimed
3.	Weather, Credit and Market Information Support	620,000	45.0% of total expenditure claimed
4.	Consultants	2,020,000	36.0% of total expenditure claimed
5.	Interest during construction	1,360,000	100.0% of amount due
	Total	40,500,000	

Note: Totals include contingencies.

Table 8: Allocation of GAFSP Grant Proceeds

No.	Expenditure Item	Total Amount Allocated for GAFSP Financing (\$)	Basis for Withdrawal from the Grant Account
1.	Shallow Tube wells	8,870,000	100.0% of total expenditure claimed
2.	Vehicles and Agricultural Digital Finance Service	6,410,000	100.0% of total expenditure claimed
3.	Training, Workshops and Studies	2,410,000	55.0% of total expenditure claimed
4.	Weather, Credit and Market Information Support	750,000	55.0% of total expenditure claimed
5.	Consultants	3,560,000	64.0% of total expenditure claimed
	Total	22,000,000	

Note: Totals include contingencies.

E. Detailed Cost Estimates by Financier

Table 9: Detailed Cost Estimates by Financier

Item	ADB Loan		GAFSP Grant		Beneficiaries		Gov't of Myanmar		Total	
	Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category	Amount	% of Cost Category	Amount	Taxes and duties
A. Investment Costs										
Civil Works	21.23	100.0	0.00	0.0	0.00	0.0	0.00	0.0	21.23	1.03
Machinery and Equipment	3.94	100.0	0.00	0.0	0.00	0.0	0.00	0.0	3.94	0.16
Shallow Tube wells ^a	0.00	0.0	8.87	90.0	0.99	10.0	0.00	0.0	9.85	0.38
Materials and Supplies	5.50	100.0	0.00	0.0	0.00	0.0	0.00	0.0	5.50	0.21
Vehicles	0.00	0.0	0.35	100.0	0.00	0.0	0.00	0.0	0.35	0.05
Training, Workshops and Studies	2.00	45.4	2.41	54.6	0.00	0.0	0.00	0.0	4.41	0.17
Weather, Credit and Market Information Support	0.62	45.4	0.75	54.6	0.00	0.0	0.00	0.0	1.37	0.05
Consultants	2.02	36.2	3.56	63.8	0.00	0.0	0.00	0.0	5.59	0.30
Feasibility Studies and Detailed Design	1.05	100.0	0.00	0.0	0.00	0.0	0.00	0.0	1.05	0.04
Digital Finance Design and Management	0.00	0.0	1.26	100.0	0.00	0.0	0.00	0.0	1.26	0.05
Project Implementation Support ^b	2.77	100.0	0.00	0.0	0.00	0.0	0.00	0.0	2.77	0.11
Government Counterpart Support	0.00	0.0	0.00	0.0	0.00	0.0	1.43	100.0	1.43	0.00
Agricultural Digital Finance Service	0.00	0.0	4.81	100.0	0.00	0.0	0.00	0.0	4.81	0.00
Subtotal (A)	39.14	61.6	22.00	34.6	0.99	1.6	1.43	2.3	63.56	2.56
B. Financing Charges During Implementation										
Interest during construction	1.36	100.0	0.00	0.0	0.00	0.0	0.00	0.0	1.36	0.00
Subtotal (B)	1.36	100.0	0.00	0.0	0.00	0.0	0.00	0.0	1.36	0.00
Total Project Costs (A+B)	40.50	62.4	22.00	33.9	0.99	1.5	1.43	2.2	64.92	2.56

Note: Numbers may not sum precisely because of rounding.

^a Beneficiaries will contribute 10% of the total cost of shallow tube well installation, in cash or in kind, directly to the contractor. The GAFSP grant will finance 100% of the balance invoiced by the contractor.

^b Includes costs of office equipment (furniture), office supplies, telecommunications, travel including per diem, monitoring and evaluation, and external monitoring agency for safeguards.

Source: Asian Development Bank estimates.

F. Detailed Cost Estimates by Outputs and/or Components

Table 10: Detailed Cost Estimates by Outputs (\$million)

Item	Output 1		Output 2		Output 3		Project Management		Total Cost
	Amount	% of cost category	Amount	% of cost category	Amount	% of cost category	Amount	% of cost category	Amount
A. Investment Costs									
Civil Works	15.82	100.0	0.00	0.0	0.00	0.0	0.00	0.0	15.82
Machinery and Equipment	3.19	94.1	0.20	5.9	0.00	0.0	0.00	0.0	3.39
Shallow Tube wells	7.94	100.0	0.00	0.0	0.00	0.0	0.00	0.0	7.94
Materials and Supplies	1.35	29.9	2.13	47.2	1.03	22.8	0.00	0.0	4.51
Vehicles	0.00	0.0	0.00	0.0	0.00	0.0	0.32	100.0	0.32
Training, Workshops and Studies	0.00	0.0	2.14	61.2	1.36	38.8	0.00	0.0	3.50
Weather, Credit and Market Information Support	0.00	0.0	0.00	0.0	1.06	100.0	0.00	0.0	1.06
Consultants	0.00	0.0	0.00	0.0	0.00	0.0	4.70	100.0	4.70
Feasibility Studies & Detailed Design	0.82	100.0	0.00	0.0	0.00	0.0	0.00	0.0	0.82
Digital Finance Design and Management	0.00	0.0	1.00	100.0	0.00	0.0	0.00	0.0	1.00
Project Implementation Support	0.00	0.0	0.00	0.0	0.00	0.0	2.27	100.0	2.27
Government Counterpart Support	0.00	0.0	0.00	0.0	0.00	0.0	1.16	100.0	1.16
Agricultural Digital Finance Service	0.00	0.0	4.76	100.0	0.00	0.0	0.00	0.0	4.76
Subtotal (A)	29.12	56.8	10.23	20.0	3.45	6.7	8.45	16.5	51.25
B. Contingencies									
Physical	2.25	72.9	0.27	8.9	0.17	5.6	0.39	12.6	3.08
Price	6.12	66.4	1.08	11.7	0.71	7.7	1.31	14.2	9.23
Subtotal (B)	8.37	68.0	1.36	11.0	0.88	7.2	1.70	13.8	12.31
C. Financing Charges During Implementation (FCDI)									
Interest during construction	0.77	56.8	0.27	20.0	0.09	6.7	0.22	16.5	1.36
Subtotal (C)	0.77	56.8	0.27	20.0	0.09	6.7	0.22	16.5	1.36
Total Project Costs (A+B)	38.27	58.9	11.86	18.3	4.42	6.8	10.38	16.0	64.92

Note: Numbers may not sum precisely because of rounding.

Source: Asian Development Bank estimates.

G. Detailed Cost Estimates by Year

Table 11: Detailed Cost Estimates by Year (\$million)

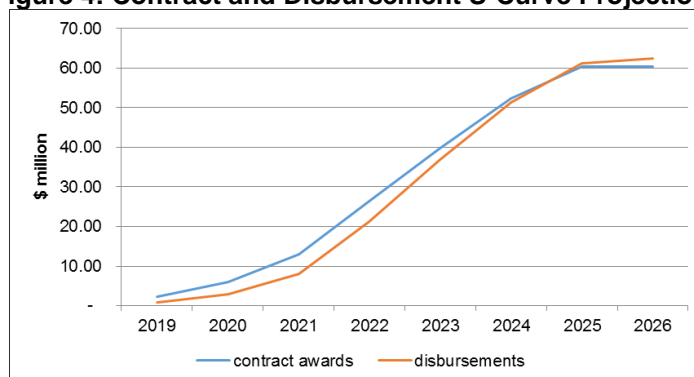
Item	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
A. Investment Costs								
Civil Works	0.47	0.84	2.44	2.69	3.75	3.16	2.47	15.82
Machinery and Equipment	0.10	0.18	0.52	0.58	0.80	0.68	0.53	3.39
Shallow Tube wells	0.24	0.42	1.22	1.35	1.88	1.59	1.24	7.94
Materials and Supplies	0.13	0.24	0.70	0.77	1.07	0.90	0.71	4.51
Vehicles	0.01	0.02	0.05	0.05	0.08	0.06	0.05	0.32
Training, Workshops and Studies	0.10	0.19	0.54	0.60	0.83	0.70	0.55	3.50
Weather, Credit and Market Information Support	0.03	0.06	0.16	0.18	0.25	0.21	0.17	1.06
Consultants	0.14	0.25	0.72	0.80	1.11	0.94	0.73	4.70
Feasibility Studies & Detailed Design	0.02	0.04	0.13	0.14	0.19	0.16	0.13	0.82
Digital Finance Design and Management	0.03	0.05	0.15	0.17	0.24	0.20	0.16	1.00
Project Implementation Support	0.07	0.12	0.35	0.39	0.54	0.45	0.36	2.27
Government Counterpart Support	0.03	0.06	0.18	0.20	0.27	0.23	0.18	1.16
Agricultural Digital Finance Service	0.14	0.25	0.73	0.81	1.13	0.95	0.74	4.76
Subtotal (A)	1.52	2.71	7.90	8.72	12.14	10.25	8.01	51.25
B. Contingencies								
Physical	0.09	0.16	0.48	0.52	0.73	0.62	0.48	3.08
Price	0.27	0.49	1.42	1.57	2.19	1.85	1.44	9.23
Subtotal (B)	0.37	0.65	1.90	2.09	2.92	2.46	1.93	12.31
C. Financial charges during implementation								
Interest during construction	0.04	0.07	0.21	0.23	0.32	0.27	0.21	1.36
Subtotal (C)	0.04	0.07	0.21	0.23	0.32	0.27	0.21	1.36
Total Project Costs (A+B+C)	1.93	3.44	10.01	11.04	15.37	12.98	10.15	64.92

Source: Asian Development Bank estimates.

H. Contract and Disbursement S-Curve

19. The estimated disbursement progress over the implementation period for the ADB loan and the GAFSP grant are shown in Figure 4.

Figure 4: Contract and Disbursement S-Curve Projections



Total Proceeds

	Contract Awards (in USD million)					Disbursements (in USD million)				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
2019	0.00000	0.11728	0.08036	2.11303	2.31067	0.00000	0.00000	0.34588	0.45523	0.80111
2020	0.13511	1.82026	0.75720	0.98611	3.69868	0.00000	0.68696	0.70527	0.80429	2.19651
2021	0.00000	1.21117	3.52834	2.27965	7.01916	0.02091	1.06431	0.37085	3.53059	4.98666
2022	0.00000	4.89945	4.21332	4.17382	13.28660	0.00000	2.35536	5.24225	5.68142	13.27903
2023	0.53755	6.54859	2.60952	3.75519	13.45086	0.15447	3.77520	1.16640	10.61917	15.71524
2024	5.68542	1.48766	1.06548	4.26058	12.49914	0.15447	2.43415	3.26457	8.42004	14.27324
2025	3.49094	0.59651	2.88650	1.07916	8.05311	0.00000	2.82610	2.35443	4.68899	9.86953
2026	0.70995	0.11173	0.00000	0.00000	0.82168	0.45368	0.66362	0.11173	0.14965	1.37867
	Total Contract Awards				61.1399	Total Disbursements				62.5000

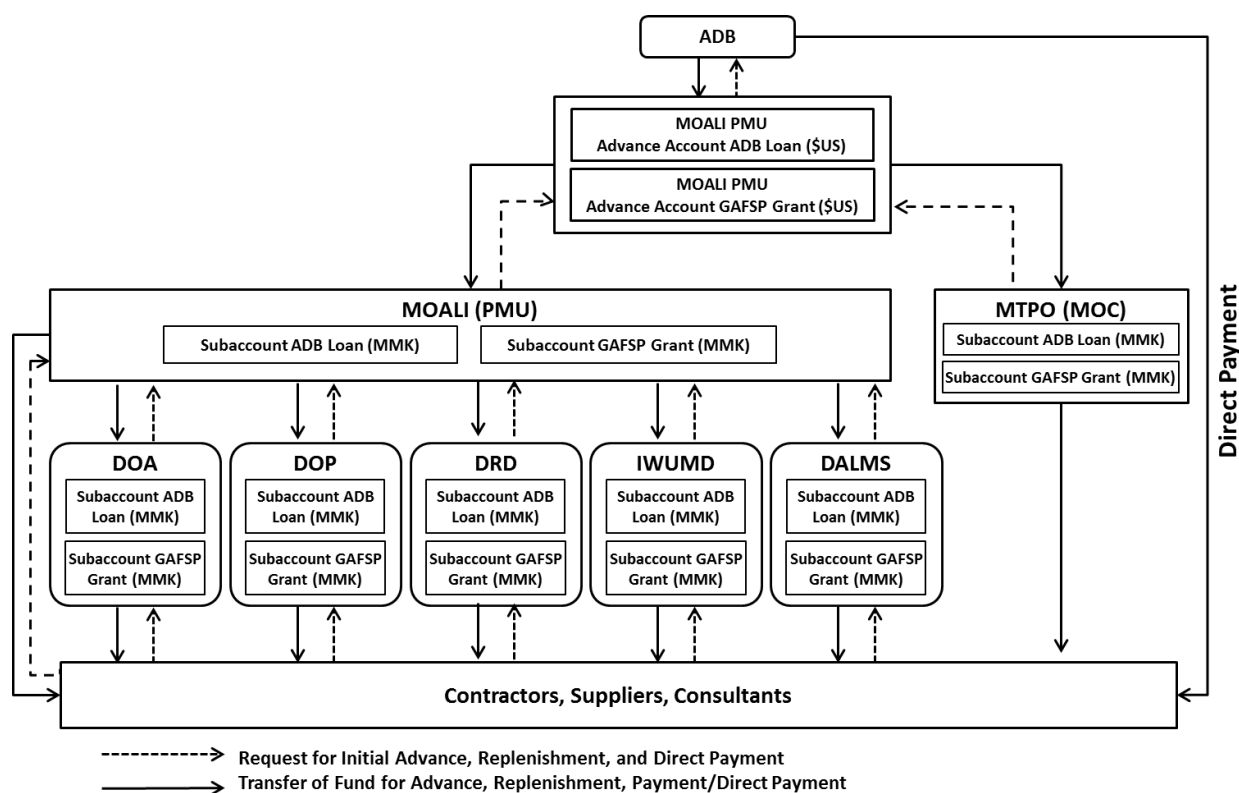
ADB Loan Proceeds

	Contract Awards (in USD million)					Disbursements (in USD million)				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
2019	0.00000	0.04691	0.03214	0.84521	0.92427	0.00000	0.00000	0.13835	0.30883	0.44718
2020	0.05511	0.45292	0.75720	0.98611	2.25134	0.00000	0.51042	0.40884	0.36021	1.27947
2021	0.00000	1.03463	3.27727	2.20053	6.51242	0.02091	0.88777	0.21122	3.08651	4.20641
2022	0.00000	1.03287	3.67577	3.96098	8.66963	0.00000	2.10428	5.08263	1.07268	8.25959
2023	0.00000	3.44511	1.84708	3.75519	9.04739	0.15447	3.36449	1.12684	5.89037	10.53617
2024	2.34895	1.02374	0.52793	4.04774	7.94837	0.15447	2.18307	3.26457	3.94232	9.54443
2025	0.15447	0.13259	2.34895	0.86633	3.50235	0.00000	2.66648	1.27933	1.28637	5.23218
2026	0.17240	0.11173	0.00000	0.00000	0.28412	0.06957	0.66362	0.11173	0.14965	0.99457
	Total Contract Awards				39.1399	Total Disbursements				40.5000

GAFSP Grant Proceeds

	Contract Awards (in USD million)					Disbursements (in USD million)				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
2019	0.00000	0.07037	0.04822	1.26782	1.38640	0.00000	0.00000	0.20753	0.14640	0.35393
2020	0.08000	1.36734	0.00000	0.00000	1.44734	0.00000	0.17654	0.29642	0.44408	0.91705
2021	0.00000	0.17654	0.25108	0.07912	0.50674	0.00000	0.17654	0.15963	0.44408	0.78025
2022	0.00000	3.86658	0.53755	0.21284	4.61697	0.00000	0.25108	0.15963	4.60874	5.01944
2023	0.53755	3.10348	0.76244	0.00000	4.40347	0.00000	0.41070	0.03956	4.72880	5.17907
2024	3.33647	0.46391	0.53755	0.21284	4.55077	0.00000	0.25108	0.00000	4.47773	4.72880
2025	3.33647	0.46391	0.53755	0.21284	4.55077	0.00000	0.15963	1.07510	3.40262	4.63735
2026	0.53755	0.00000	0.00000	0.00000	0.53755	0.38410	0.00000	0.00000	0.00000	0.38410
	Total Contract Awards				22.0000	Total Disbursements				22.0000

I. Fund Flow Diagram



ADB = Asian Development Bank; DOA = Department of Agriculture; DRD = Department of Rural Development; IWUMD = Irrigation and Water Utilization Management Department; MOALI = Ministry of Agriculture, Livestock and Irrigation; MOC = Ministry of Commerce; MTPO = Myanmar Trade Promotion Organization; PIU= project implementation unit; PMU = project management unit.
Source: Asian Development Bank.

V. FINANCIAL MANAGEMENT

A. Financial Management Assessment

20. The financial management assessment (FMA) was conducted in December 2016 and October 2017 in accordance with ADB's Guidelines for the Financial Management and Analysis of Projects and the Financial Due Diligence: A Methodology Note. The FMA considered the capacity of MOALI as executing agency and the Department of Agriculture (DOA), Irrigation and Water Utilization Management Department (IWUMD), and Department of Rural Development (DRD) as implementing agencies through which 90% of funds are expected to be spent. The FMA assessed the funds-flow arrangements, staffing, accounting and financial reporting systems, financial information systems, and internal and external auditing arrangements. Based on the assessment, the key financial management risks identified are: (i) vulnerability of macroeconomic stability and the fiscal position from external shocks; (ii) weak public financial management and internal audit processes, (iii) lack of transparency and accountability; (iv) limited experience on implementation of externally funded projects, (v) limited financial management capability and resources; and (v) management and skill capacity issues in financial management and weak administrative capacity to implement reform and modernization of financial management and reporting systems. It is concluded that the overall pre-mitigation financial management risk of the executing and implementing agency is **substantial**. MOALI, as the executing agency and with some experience in the implementation of ongoing ADB projects, has agreed to appoint qualified staff with capacity to administer advance accounts and implement statement of expenditure (SOE) procedures. The executing agency and implementing agencies have also agreed to implement an action plan as key measures to address the deficiencies. The financial management action plan is provided in the following table.

Table 12: Time-bound Financial Management Action Plan

Weakness	Mitigation Action	Responsibility	Timeframe
EA and IAs have limited experience of IFI-funded projects and knowledge of ADB requirements.	PMU and other EA and IA staff will be trained on ADB accounting, disbursement and auditing procedures	EA/PMU/IA	From one month of project effectiveness to 3 years of implementation
IA's have weak capacity for supporting ADB's financial management, planning, budgeting, reporting, and verification requirements.	A project management team including a qualified international financial management specialist and a qualified national financial management specialist will be recruited to provide necessary support and to strengthen internal control of the PMU and PIU.	EA/PMU/ PIC	Within three months of project effectiveness
	Development of a financial management training plan and all project financial staff to be trained.	PMU/PIC	Within nine months of project effectiveness
	A financial management manual will be prepared incorporating both government and ADB's requirements	EA/PMU/PIC	By six months from project start-up

The accounting system used in MOALI TPS is a paper-based manual system which is not conducive to the efficient and effective management of the entity, especially with respect to budgeting, accountability for the source and application of all funds.	PMU to introduce and have operational a computerized accounting system (e.g., Quickbook or similar accounting software)	PMU/PIC	Set up and running within six months of loan effectiveness
Internal audit and control is weak.	MOALI to allocate budget and appoint qualified audit specialist. EA/IAs staff will be trained regularly on internal audit procedures. MOPF will ensure that MOALI will include the project to be subject to internal audit to ensure that the organization's Internal Audit Unit carries out regular reviews of the internal control processes.	EA/IA/PMU/ ADB	By the 6th month of project effectiveness. Within 1 year of project effectiveness
External Audit is weak	The terms of reference for the required external audits to be agreed with the ADB for OAG or a private audit firm whose qualifications, experience and terms of reference are acceptable to ADB, will be recruited to audit the project financial statements. Budget to engage an external audit firm has been allocated under the project management expense category	MOALI/OAG/ ADB	Within 1 year of project effectiveness

ADB = Asian Development Bank; DOA= Department of Agriculture; EA = executing agency; IA = implementing agency; IFI= international financial institution; MOALI = Ministry of Agriculture, Livestock and Irrigation; OAG = Office of Auditor General; PIC = project implementation consultants; PMU = project management unit.

B. Disbursement

21. The loan and ADB administered grant proceeds, will be disbursed in accordance with ADB's Loan Disbursement Handbook (2017, as amended from time to time),⁸ and detailed arrangements agreed upon between the government and ADB. Online training for project staff on disbursement policies and procedures is available.⁹ Project staff will be required to avail of this training within 6 months of project effectiveness to help ensure efficient disbursement and fiduciary control.

22. The PMU will be responsible for (i) preparing disbursement projections and its timely submission to MOALI; (ii) requesting budgetary allocations for counterpart funds; (iii) collecting and retaining supporting documents and making these available for audit purposes; and (iv) preparing and sending withdrawal applications to ADB.

23. **Compensating balance account.** Using the GAFSP grant, the MOALI Department of Rural Development (DRD) will launch agricultural digital finance service (ADFS), in collaboration with a competitively selected financial service provider (FSP). The objective of ADFS is to provide

⁸ The handbook is available electronically from the ADB website (<http://www.adb.org/documents/loan-disbursement-handbook>).

⁹ Disbursement eLearning. http://wpqr4.adb.org/disbursement_elearning

seasonal credit to about 35,000 small farmer households to purchase quality agricultural inputs, access farm mechanization services or pursue off-farm livelihood opportunities. After signing a legally binding public-private partnership agreement with DRD, the FSP will establish a compensating balance account (CBA) for ADFS, in which the project will make a one-time disbursement of \$100 per household. The DRD and FSP will submit two supporting documents with the withdrawal application: (i) the list of beneficiaries identified by DRD through community-driven development approach, and (ii) the underlying public-private partnership agreement between DRD and FSP for the ADFS and administration of the CBA. See Appendix 4 for detailed arrangements for ADFS.

24. **Advance fund procedure.** MOALI will establish and maintain two separate advance accounts in US dollar for ADB loan and ADB-administered grant. The advance accounts are to be used exclusively for ADB's and ADB administered financing's share of eligible expenditures. MOALI will be accountable and responsible for the proper use of advances, including advances to the subaccounts.

25. Fourteen subaccounts (one each for ADB loan and GAFSP grant in the executing agency and each implementing agency) will be opened at the national level for MOALI, DOA, DOP, DRD, IWUMD, DALMS and MTPO. It is expected that majority of the expenditure will be incurred either through direct payments or through these subaccounts.

26. The total outstanding advance to the respective advance account should not exceed the estimate of ADB's and ADB administered financing's share to be paid through the advance account for the forthcoming six months. MOALI may request for initial and additional advances to the respective advance account based on an estimate of expenditure sheet setting out the estimated expenditures to be financed through the respective account for the forthcoming six months.¹⁰ Supporting documents should be submitted to ADB or retained by MOALI in accordance with ADB's Loan Disbursement Handbook (2017, as amended from time to time) when liquidating or replenishing the advance account. All withdrawal applications will be sent to ADB for processing.

27. **Statement of expenditure (SOE) procedure.**¹¹ Reimbursements and liquidations of advances to the advance account will be based on full documentation for eligible expenditures during the first year of project implementation. Thereafter, the SOE procedure may be considered for reimbursement and to liquidate and replenish the advance accounts for eligible expenditures after one year of project implementation. Any individual payment to be reimbursed or liquidated under this procedure shall not exceed the equivalent of \$50,000. Supporting documents and records for the expenditures claimed under the SOE should be maintained and made readily available for review by ADB's disbursement and review missions, upon ADB's request for submission of supporting documents on a sampling basis, and for independent audit. Reimbursement and liquidation of individual payments in excess of the SOE ceiling should be supported by full documentation when submitting the withdrawal application to ADB.

28. Before the submission of the first withdrawal application, the borrower should submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of the government, together with the authenticated specimen signatures of each authorized person. The minimum value per withdrawal application is set in accordance with ADB's Loan Disbursement Handbook (2017, as amended from time to time). Individual payments below

¹⁰ Estimate of Expenditure sheet is available in Appendix 8A of ADB's Loan Disbursement Handbook (2017, as amended from time to time).

¹¹ SOE forms are available in ADB's *Loan Disbursement Handbook* (2017, as amended from time to time).

such amount should be paid (i) by MOALI and subsequently claimed to ADB through reimbursement, or (ii) through the advance fund procedure, unless otherwise accepted by ADB. The borrower should ensure sufficient category and contract balances before requesting disbursements. SOE records should be maintained and made readily available for review of ADB's disbursement review mission or upon ADB's request for submission of supporting documents on a sampling basis, and for independent external audit. The withdrawal applications must be sequentially numbered starting with number one.

C. Accounting

29. The EA and IAs will maintain separate account books and records by funding source for all expenditures incurred on the project. Cash basis accounting will be followed. The EA will prepare consolidated project financial statements in accordance with Myanmar's accounting laws and regulations, which are consistent with international accounting principles and practices. The project-hired international and national financial management specialists will train IAs in maintaining proper project financial records, and the EA in consolidating financial reports from IAs, especially during the first two years of project implementation.

D. Auditing and Public Disclosure

30. MOALI will ensure the detailed project financial statements are audited in accordance with International Standards on Auditing by the Office of the Auditor General, or an independent auditor acceptable to ADB. The audited project financial statements together with the auditor's opinion will be presented in the English language to ADB within six months from the end of each fiscal year by the executing agency.

31. The audit report for the project financial statements 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 loan and 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 legal agreements (where applicable).

32. 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.

33. The government, MOALI and the implementing agencies have been made aware of ADB's approach to delayed submission of audit reports, and the requirements for satisfactory and acceptable quality of the audited project financial statements.¹² ADB reserves the right to require

¹² ADB's approach and procedures regarding delayed submission of audited project financial statements:

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

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.

34. 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 2011.¹³ 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.¹⁴

¹³ Public Communications Policy: <http://www.adb.org/documents/pcp-2011?ref=site/disclosure/publications>

¹⁴ 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

35. All advance contracting will be undertaken in conformity with ADB 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). The issuance of invitations to bid under advance contracting will be subject to ADB approval. The government, MOALI and the implementing agencies have been advised that approval of advance contracting does not commit ADB to finance the project.

36. Advance contracting will be undertaken to recruit the start-up consultants and Project Implementation Consultants (PIC).

B. Procurement of Goods, Works, and Consulting Services

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

38. International competitive bidding (ICB) procedures will be used for works contracts estimated to cost from \$3 million and above, and for goods contracts estimated to cost \$500,001 and above. Works contracts estimated to cost below \$3 million up to \$100,000, and goods contract \$500,000 up to \$100,000 will be procured through the national competitive bidding (NCB) procedures.

39. Minor items estimated to cost below \$100,000 for both works and goods will be procured through shopping method.

40. An 18-month procurement plan indicating threshold and review procedures, goods, works, and consulting service packages and national competitive bidding guidelines is in Section C.

C. Procurement Plan

Basic Data

Table 13: Procurement Basic Data

Project Name: Climate-Friendly Agribusiness Value Chains Sector Project	
Project Number: 48409-003	Approval Number: LXXXX and GXXXX
Country: Republic of the Union of Myanmar	Executing Agency: Ministry of Agriculture, Livestock and Irrigation (MOALI)
Project Procurement Classification: A	Implementing Agency: Department of Agriculture (DOA) of MOALI, Department of Planning (DOP) of MOALI, Irrigation and Water Utilization Management Department (IWUMD) of MOALI, Department of Rural Development (DRD) of MOALI, Department of Agricultural Land Management and Statistics (DALMS) of MOALI and Myanmar Trade Promotion Organization (MyanTrade) of Ministry of Commerce
Project Procurement Risk: High	
Project Financing Amount: \$64,920,000 ADB Financing: \$40,500,000 Co-financing (ADB Administered): \$22,000,000 Non-ADB Financing: \$2,420,000	Project Closing Date: 30 June 2026
Date of First Procurement Plan: 16 December 2017	Date of this Procurement Plan: August 2018, Version 0

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

(i) Procurement and Consulting Methods and Thresholds

41. Except as ADB may otherwise agree, the following process thresholds shall apply to procurement of goods and works.

Procurement of Goods and Works		
Method	Threshold	Comments
International Competitive Bidding (ICB) for Goods	\$500,001 and Above	Prior review
National Competitive Bidding (NCB) for Goods	Between \$100,000 and \$500,000	First three packages required for prior review regardless of amount. Post review will be followed if the process and capacity demonstrate adequacies.
Shopping for Goods	Below \$100,000	First three packages required for prior review. Post review will be followed if the process and capacity demonstrate adequacies.
ICB for Works	US\$3,000,000 and above	Prior review
NCB for Works	Between \$100,000 and \$2,999,999	All NCB packages larger than \$2 million will require prior review by ADB. First three packages regardless of amount will require prior review. Post review will be followed if the process and capacity demonstrate adequacies.

Shopping for Works	Below \$100,000	First three packages required for prior review. Post review will be followed if the process and capacity demonstrate adequacies.
Community Participation in Procurement for Works	Below \$10,000	First three packages required for prior review. Post review will be followed if the process and capacity demonstrate adequacies.

Consulting Services	
Method	Comments
Quality and Cost Based Selection for Consulting Firms (QCBS)	Prior Review
Consultant's Qualification Selection for Consulting Firm (CQS)	Prior Review
Individual Consultants Selection for Individual Consultant (ICS)	Prior Review
Single-source selection (SSS)	Prior Review

2. Goods and Works Contracts Estimated to Cost \$1 Million or More

42. 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.

None

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

43. 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
CS-01	Project Implementation Consultants	3,460,000	QCBS	Prior	Q4 2018	FTP	Advance Contracting Assignment: International and National Quality Cost Ratio: 90:10
CS-02	Detailed design and Supervision for Irrigation and Farm Roads Subprojects	1,050,000	QCBS	Prior	Q3 2019	FTP	Assignment: International and National Quality Cost Ratio: 90:10
CS-03	Procurement Start-up Specialist	170,000	ICS	Prior	Q4 2018		Assignment: International
CS-04	Finance Management Specialist	100,000	ICS	Prior	Q4 2018		Assignment: International
CS-05	Agriculture Digital Finance Service (ADFS) Specialist	170,000	ICS	Prior	Q1 2019		Assignment: International
CS-06	Senior Project Advisor	110,000	ICS	Prior	Q4 2018		Assignment: National

CS = consulting services; FTP = full technical proposal; ICS = individual consultants selection for individual consultants; Q = quarter; QCBS = quality- and cost- based selection for consulting firms

Goods and Works Contracts Estimated to Cost Less than \$1 Million and Consulting Services Contracts Less than \$100,000 (Smaller Value Contracts)

44. 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
Works contract packages								
CW-01	Representative Irrigation Subproject & Chepa Seed Farm Irrigation	330,000	1	NCB	Prior	1S1E	Q1 2020	Bidding Document: Small Works
Goods contract packages								
GD-01	Office Equipment and Furniture	130,000	4	Shopping	Prior	RFQ	Q3 2019	
GD-02	Vehicles	350,000	1	NCB	Prior	1S1E	Q3 2019	

1S1E = single stage, 1 envelope; CW = civil works; GD = goods; NCB = national competitive bidding; RFQ = request for quotations; Q = quarter

6. Indicative List of Packages Required Under the Project

45. The following table 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 and Works							
Package Number	General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Procurement Method	Review (Prior/Post)	Bidding Procedure	Comments
CW-02	Farm Irrigation (Minor Canals) and Community Reservoirs	11,740,000	6	NCB	Prior	1S1E	Bidding Document: Small Works
CW-03	Tubewell Installation	9,850,000	4	NCB	Prior	1S1E	Bidding Document: Small Works
CW-04	Farm Roads	6,080,000	3	NCB	Post	1S1E	Bidding Document: Small Works
CW-05	DOA seed farms (buildings, fence, storage, roads, canals and post-harvest facilities)	3,320,000	3	NCB	Post	1S1E	Bidding Document: Small Works
GD-03	DOA seed farms –Equipment	1,350,000	3	NCB	Post	1S1E	ADB-SBD for goods to be used
GD-04	Laboratory Upgrade and Equipment	2,360,000	3	ICB	Prior	1S1E	ADB-SBD for goods to be used
GD-05	Maximum Residue Level Testing	930,000	3	NCB	Prior	1S1E	ADB-SBD for goods to be used

1S1E = single stage, 1 envelope; ADB-SBD = Asian Development Bank standard bidding documents; CW = civil works; DOA = Department of Agriculture; GD = goods; ICB = international competitive bidding; NCB = national competitive bidding

Consulting Services							
Package Number	General Description	Estimated Value (cumulative)	Estimated Number of Contracts	Recruitment Method	Review (Prior/Post)	Type of Proposal	Comments
CS-07	External Monitoring Agency	240,000	1	CQS	Prior	BTP	Assignment: National
CS-08	Monitoring and Evaluation	240,000	1	CQS	Prior	BTP	Assignment: International and National
CS-09	Capacity Building and CSA Training	2,440,000	1	QCBS	Prior	FTP	Quality Cost Ratio: 90:10
CS-10	Climate-resilient Variety Development and Dissemination Package	1,970,000	1	SSS	Prior		
CS-11	Land Management Senior Adviser	130,000	1	ICS	Prior	CV	Assignment: International
CS-12	Community-based Support for ADFS	180,000	1	CQS	Prior	BTP	Assignment: National
CS-13	Qualified Private Auditor	140,000	1	CQS	Prior	BTP	

ADFS = Agriculture Digital Finance Service; BTP = biodata technical proposal; CS = consulting services; CSA = climate smart agriculture; CQS = consultant's qualification selection for consulting firms; CV = curriculum vitae; FTP = full technical proposal; ICS = individual consultants selection for individual consultants; Q = quarter; QCBS = quality- and cost- based selection for consulting firms; SSS = single source selection

4. National Competitive Bidding

a. Regulation and Reference Documents

46. The procedures to be followed for national competitive bidding shall be those set forth in ADB's standard bidding documents, with the clarifications and modifications described in the following paragraphs required for compliance with the provisions of ADB's Procurement Guidelines (2015, as amended from time to time).

b. Procurement Procedures

(i) Application

47. Contract packages subject to national competitive bidding 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.

(ii) Eligibility

48. 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.

(iii) Sanctioning

49. Bidders shall not be declared ineligible or prohibited from bidding on the basis of barring procedures or sanction lists, except individuals and firms sanctioned by ADB, without prior approval of ADB.

(iv) **Advertising**

50. 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.

(v) **Rejection of all Bids and Rebidding**

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

c. **Bidding Documents**

(i) **ADB Policy Clauses**

52. 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.

53. 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, coercive or obstructive practices in competing for the contract in question.

54. 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.

D. Consultant's Terms of Reference

55. All consulting services will be recruited according to ADB's Guidelines on the Use of Consultants (2013, as amended from time to time).¹⁵ Summarized person months for all consulting services are given below and detailed terms of references are in Appendix 5.

Table 14: Individual Consultants

Key Expert	International (person-months)	National (person-months)
Procurement Specialist (start-up)	5	
Financial Management Specialist (start-up)	3	
Land Management Senior Adviser	8	
Agricultural Digital Finance Service Specialist	5	
Senior Project Advisor (start-up)		5
	21	5

¹⁵ Steps required to contract consultants available in e-Handbook on Project Implementation at <http://www.adb.org/documents/handbooks/project-implementation/>

Table 15: Project Implementation Consultants

Key Expert	International (person-months)	National (person-months)
Value Chain Specialist/Team Leader	22	70
Irrigation Supervision Engineer	6	26
Road Supervision Engineer	5	19
Financial Management Specialist	8	46
Procurement Specialist	9	37
Value Chain Gender Specialist / Specialized Support Services in Gender	3	30
Social Safeguards Specialist	2	10
Environmental Safeguards Specialist	6	20
Monitoring and Evaluation Specialist	6	20
Supervision Engineer for DOA Seed Farms		24
	67	302

Table 16: Capacity Building and Climate Smart Agriculture Training Consultants

Key Expert	International (person-months)	National (person-months)
Laboratory, Quality and Safety Training Specialist	4	
Farm Mechanization Specialist	3	6
Agribusiness Policy and Public Private Partnerships Specialist	9	35
Agricultural Quality, Safety and Standards Specialist	6	12
Geographic Indication, Branding & Marketing Specialist	4	9
Green Finance Capacity Building Specialist	5	9
Market and Credit Information Specialist	6	18
Land Use, GIS and Agro-Ecological Zoning Specialist	6	18
Rural Land Planning and Administration Specialist	6	8
Land Administration Services Specialist	3	8
Capacity Building Coordinator		60
Seed Production and Certification Specialist		7
Irrigation and Water Management Specialist		36
Post-harvest Handling and Storage Specialist		11
Farm Mechanization Business Development Specialist		6
Climate Smart Agriculture and Agribusiness Specialist		30
	52	273

Table 17: Feasibility Studies and Detailed Design Consultants

Key Expert	International (person-months)	National (person-months)
Team Leader/Irrigation Design Engineer	5	10
Road Design Engineer	2	8
Hydrologist	2	4
Procurement Specialist	3	6
Environmental Safeguards Specialist	2	4
Social Safeguards Specialist	2	5
Agricultural Economist	5	
Agronomist		5
AutoCAD Specialist		12
	21	54

56. **Individual Consultants.** Three individual consultants will be recruited to assist PMU with start-up activities. A land management senior adviser will assist the PMU with DALMS in developing a more efficient, digitalized and client friendly land administration service. The

Agricultural Digital Finance Specialist will be recruited to support MOALI and DRD in contracting a qualified financial service provider for the development and implementation of the ADFS.

57. **Project Implementation Consultants (PIC).** PIC consulting firm will be recruited to (i) provide management and technical assistance to the EA and IAs in the implementation of the project and meet the reporting and procedural requirements of ADB; (ii) carry out supervision of subproject activities; (iii) assist in project performance monitoring and evaluation; (iv) develop and implement the capacity building master plan; (v) implement policy research studies and pilot activities; and (vi) ensure adequate provision for compliance with social and environmental safeguards, including monitoring and review during the construction and post-construction period.

58. **Capacity Building and Climate Smart Agriculture Consultants.** The consulting entity will provide technical capacity building and advisory services to the EA and IA in the implementation of the project. The capacity building/CSA consultants will work in close coordination with the project implementation consultants (PIC), contracted under a separate package, who will concentrate principally on support to project management, procurement, safeguard compliance, and monitoring and evaluation.

59. **Feasibility Studies and Detailed Design Consultants.** The consulting agency will prepare designs for the rehabilitation/upgrading of infrastructure on ten DOA seed farms, 130 kms of tertiary canals, 15 community-owned reservoirs, and 300 kms single-track farm feeder roads.

60. **External Monitoring Agency (EMA).** To monitor all safeguard activities under the project. EMA will focus on assessing progress and compliance with the environmental management plans (EMPs), the ethnic group development plans (EGDP), the GAPs, and the land acquisition and compensation plans (LACPs), identifying constraints and developing remedial actions to effectively address these. The EMA will be a national entity and will have experience in resettlement, environment and ethnic groups.

61. **Climate-resilient Variety Development and Dissemination Package (single source selection).** An international research institution of high repute will be recruited using single source selection to deploy climate-resilient varieties and disseminate climate smart agriculture (CSA) practices, including improved land-water-nutrient management and crop establishment practices. The work includes dissemination of mechanized cultivation practices that have reduced risk and drudgery and generate avenues for employment for youth and women farmers. The project will work closely with MOALI and other key institutions as well as private-sector partners for the deployment of the climate-resilient varieties and technology of different crops. The work includes efforts to reduce postharvest losses during harvesting, drying, storage, and processing through implementation of modernized post-harvest practices, capacity development and training on postharvest technology, and the development of linkages between the public and private sector.

62. Based on assessment of various institutions in the region focusing on development and deployment of climate-resilient varieties, and substantial contributions made so far on climate smart agriculture in various countries including Myanmar, it is proposed to select the International Rice Research Institute (IRRI) to deliver the above services. The detailed terms of reference will be developed by MOALI with cooperation from project implementation consultants during the first year of project implementation after assessing needs of target crops in target provinces. Additional details on description on justification are provided in Appendix 5.

VII. SAFEGUARDS

A. Resettlement and Land Acquisition

63. The project is category B for involuntary resettlement impacts, as there will be no significant involuntary physical or economic displacement, relocation or loss of livelihood. Subproject screening followed during project preparation will be used during project implementation in identifying additional subprojects. Acceptable subprojects will either be category B or C; with insignificant or no resettlement impacts. Projects requiring any significant involuntary resettlement or land acquisition will be rejected.

64. During project preparation, feasibility studies were conducted for three representative subprojects: (i) rehabilitation of infrastructure in DOA Chepa seed farm; (ii) improved irrigation with minor canal renovation; and (iii) installation of shallow tube well. The project design team conducted meaningful consultations for safeguards planning and such consultations will continue during project implementation. Land acquisition under the project is only envisaged under output 1, and mainly for the rehabilitation of irrigation systems, installation of tube wells and distribution systems, and limited feeder road rehabilitation. For example, the due diligence conducted for the Kyi Wa Irrigation system showed that the subproject will have minimal impacts wherein 4 m² of land for tube wells of land donation is envisaged. These activities will not lead to significant resettlement impacts because majority of works will be done on-farm, or between farmers' fields, or right of way alignments and will only require, if any, the acquisition of thin strips of land. Any access track improvement associated with any subproject must follow existing footprints and not involve further acquisition of land. Alternative designs will be explored to minimize the need for land acquisition.

65. The small strips of land for the rehabilitation of irrigation systems, installation of tube wells and distribution systems, and limited feeder road rehabilitation may be acquired through voluntary donation, in the case of non-productive land, or through negotiated settlement for productive land based upon market values. A combination of voluntary land donation and negotiated settlement may be used to gain access to land for project needs. Voluntary donations are subject to stringent conditions and due diligence to verify legitimacy. A rigorous due diligence procedure to verify voluntary donation bona fides has been included in the Land Acquisition and Resettlement Framework (LARF) that will be used to further screen and select subprojects during implementation. If negotiation fails and expropriation will be used, land acquisition and resettlement plan (LARP) shall be drafted in accordance with the LARF and sent to ADB for concurrence and disclosure prior to the issuance of the bidding documents.

66. The government has prepared LARF to (i) guide the preparation of LARPs where subprojects require land acquisition and (ii) conduct and report the due diligence required to establish voluntary land donation bona fides. The LARP will record details of any land acquired and/or donated by affected households and calculate the amount of compensation payable to the affected household that can be audited later. The LARP will also guide the due diligence process following completion of the detailed engineering design to justify the subproject's category, in case it does not have any impact. The draft resettlement due diligence reports for the representative subproject will be updated and finalized, and due diligence report for all subsequent subprojects prepared based on detailed engineering design. The PMU, with support from project implementation consultants, will prepare LARP in accordance with LARF, ADB's SPS and submit to ADB for review before any contracts are awarded. The LARP should be implemented first before civil works start. This LARP must clearly outline the community consultation process and detail the benefits to be received by the affected households. LARPs will be subject to a 10%

case audit by an independent agent selected through a transparent bidding process conducted by the PMU.

67. MOALI shall ensure that all the safeguards documents including due diligence and monitoring reports are disclosed by: (i) uploading the draft and ADB approved final safeguards documents on MOALI and ADB websites, (ii) information pamphlet containing summary of the projects impacts, if required in local language is distributed among the displaced persons. The international and national safeguards specialists will work closely with the project engineer to ensure that the detailed design closely accords with the preliminary design already accepted by the EA and will ensure that the final design is presented and passed at subsequent community meetings and specifically by those affected households donating land. The specialists will ensure that the donation forms are completed, one per household, duly signed by husband and wife, and witnessed by village and commune officials. These completed forms must be retained in the project office and made available for case audit by an independent agent.

68. The specialists will then screen all additional subprojects identified during project implementation and rigidly apply both the involuntary and voluntary screening checklists. Where involuntary acquisition or voluntary land donation will take place, the PMU and specialists must prepare a LARP or DDR in accordance with LARF. This LARP must clearly outline the community consultation process and detail the benefits to be received by the affected households. Where market rates for land might be largely absent, the Replacement Cost Study for the Project will consult with affected landowners/users to determine compensation amounts for land to be purchased and assets on such land. This will be based on (i) information about recent land transactions - if any; (ii) land types; (iii) cropping patterns and crop production; and (iv) availability of land in pilot areas. The project will ensure that compensation amounts are based on the replacement cost principle in accordance with ADB SPS (2009).

69. MOALI shall ensure: (i) efficient project-specific grievance redress mechanisms are in place and functional to assist the affected persons resolve queries and complaints, if any, in a timely manner; (ii) all complaints are registered, investigated and resolved in a manner consistent with the provisions of the grievance redress mechanism described in the LARF/LARP; (iii) the complainants are kept informed about status of their grievances and remedies available to them; and (iv) adequate staff and resources are available for supervising and monitoring the mechanism. Semi-annual monitoring reports will be prepared and submitted to ADB for approval and disclosure at ADB website.

B. Indigenous People and Ethnic Groups

70. The project is category B for indigenous people or ethnic groups, as there are ethnic communities in target townships. Although there are ethnic minorities living in the target townships, no such communities or households were encountered in the three representative subproject feasibility studies. However, it is possible that additional subprojects identified during project implementation may affect ethnic group households.

71. An ethnic group development framework (EGDF) has been prepared. The underlying feature of the EGDF is inclusion and participation, although there are some constraints beyond the parameters of influence of the project that could affect the degree of benefit available. The EGDF recommends action to maximize participation and consultation with any ethnic minority households should they be encountered.

72. If during detailed engineering design or implementation, any change to the scope, location with prior approval of ADB, causes to have any impact on indigenous peoples or ethnic groups,

EA and IAs shall take all steps required to ensure that the project complies with the applicable laws and regulations of Myanmar and ADB's SPS 2009. The national social safeguards specialist will undertake subproject screening to ascertain the presence of any ethnic groups and where they are present, will include actions from the EGDF as appropriate.

C. Environment

73. The project is expected to achieve significant environmental benefits including improved resilience and increased crop diversity in the project areas. Environmental due diligence has been conducted for three representative subprojects. An environmental assessment was conducted during project preparation. Based on ADB's rapid environment assessment checklist, the project is classified as category B as there may be some adverse environmental impacts which can be largely mitigated. For projects in this category, the Environmental Assessment and Review Framework (EARF) must be prepared. EARF describes the measures required to ensure that potential environmental impacts are identified, avoided, reduced, and mitigated in accordance with ADB SPS (2009) and the laws and regulations of the government. All subprojects under the project will follow the environmental assessment procedures stipulated in EARF. The EARF covers subproject screening, categorization, and preparation of Initial Environmental Examinations (IEEs) for each category B subproject. Each IEE will include impact assessment and mitigation, public consultation, information disclosure, and an environmental management plan (EMP). EMPs consist of plans for mitigation, monitoring, reporting, and stakeholder communication during pre-construction, construction, and operation phases. The EARF has been disclosed on the ADB website in March 2018 after government's concurrence. Subprojects classified as category A will not be financed. Subprojects will be screened for climate risks and incorporate risk reduction measures. Semi-annual environmental safeguards monitoring reports will be submitted by the executing agency to ADB for disclosure on ADB and project websites.

74. Pre-screening of subprojects against environmental criteria is required to minimize the risk for negative environmental impacts. Three representative subprojects were assessed during project preparation. One of the subprojects - minor canal rehabilitation and irrigation subproject in Pakokku – was assessed as category B. Therefore, an IEE along with an EMP was prepared for the subproject. The IEE confirmed that the proposed investment is not likely to cause significant adverse environmental impacts. The other two subprojects – Chepa seed farm and tubewell based irrigation subproject – were assessed as category C.

75. Irrigation and water management subprojects will include the rehabilitation of existing irrigation systems and may comprise the rehabilitation of tertiary irrigation canals and construction of water management structures. The tube wells will provide farmers with an environmentally-friendly method of pumping water for irrigation purposes.

76. For subprojects that are category C, the EARF requires an environmental code of practice (ECOP) to be prepared. An outline of the ECOP is provided in the EARF. Like EMP, the ECOP covers all phases of subproject implementation from preparation through construction and operation and sets out potential environmental impacts and corresponding environmental protection measures to: (i) avoid, (ii) where avoidance is not possible, mitigate environmental impacts, and (iii) achieve compliance with national environmental regulations and ADB Safeguard Policy Statement (SPS) (2009).

77. Within six months of the date of project effectiveness and prior to commencement of civil works, the project will establish a safeguards grievance redress mechanism. Building on experience with past ADB projects, the government is committed to and has capacity to manage social and environmental risks, including various safeguard frameworks and plans. Adequate

resources were allocated to the screening, preparation, implementation, monitoring, and reporting of social and environmental safeguards, and associated capacity development.

78. **Prohibited investment activities.** Pursuant to ADB's SPS 2009, ADB funds may not be applied to the activities described on the ADB Prohibited Investment Activities List set forth at Appendix 5 of the Safeguard Policy Statement (2009).

79. **Disclosure.** The executing and implementing agencies will be responsible for disclosing all safeguard reports at the level of township and/or regional and on the project website. During the project implementation period, all IEEs and semi-annual environmental safeguard monitoring reports will be submitted to ADB every July, which will cover the reporting period of January to June, and every January, which covers the reporting period of July to December for disclosure on ADB website.

VIII. GENDER AND SOCIAL DIMENSIONS

A. Gender Dimensions of the Project

80. According to the 2014 Myanmar Population and Housing Census, agriculture continues to be a key pillar of Myanmar's economy, largely consisting of farming, livestock production, forestry, and fisheries. Most of the rural population is engaged in subsistence farming, which is largely unmeasured. Women continue to play a key role in the agriculture sector. The gender division of agricultural labor is quite fluid with many tasks interchangeable between women and men, and only land preparation and the feeding of large animals being principally men's responsibility. The Myanmar Census of Agriculture recorded that women perform most of the tasks related to crop cultivation, including planting, caring, weeding, transplanting, harvesting, threshing, care of livestock, post-harvest operations and marketing (FAO, 2016). These tasks are in addition to their responsibilities for domestic and care work, such as gathering fuel for cooking and water for domestic use, meal preparation and caring for children and other household members. Men are responsible for making the majority of decisions concerning farm activities, business activities, and purchasing of inputs and livestock. Women's participation in agriculture varies throughout the country, and in the CDZ (Magway, Mandalay, and Sagaing), more farm laborers are women due to the high rate of male labor outmigration from this region. While attention to women's participation in agriculture is improving with enhanced data and information, their specific needs as farmers are not always acknowledged and they continue to face significant barriers in accessing government extension services, training opportunities, market information, and finance. Lack of access, control, and ownership of land (with land titles solely on men/husbands' name in the majority of cases) are also major constraints for female farmers. In 2010, 9 out of 10 agricultural households had access to agricultural land at the national level, of which 90% were male-headed and 10% were female-headed agricultural households. Of the male-headed households, 98% had access to agricultural land, while only 61% of the female-headed households had access to land (female headed households have smaller size of landholdings). Climate change is predicted to place an additional burden on all farmers, particularly women. Women farmers are vulnerable due to their limited access to productive agriculture assets as well as existing inequalities, responsibilities and roles. Improving women's resilience to climate change by supporting women's leadership is set out as a priority in the Myanmar Climate Change Strategy and Action Plan 2016–2030 (MCCSAP).

81. Myanmar has institutional mechanisms in place to support implementation of its commitments to gender equality and women's empowerment. The government's commitment to gender equality is reflected in the National Strategic Plan for the Advancement of Women (NSPAW, 2013-2022), which covers the 12 priority areas of the Beijing Platform for Action. Under

the overall leadership of the Ministry of Social Welfare, Relief and Resettlement, the Department of Social Welfare (DSW) serves as the government focal point on gender equality and women's rights. The Myanmar National Committee for Women is an important gender stakeholder, with women's organizations and representation at local levels.

82. **Gender Action Plan.** A gender action plan (GAP) in Table 18 has been prepared and includes gender actions and numerical targets to promote women's voice and active participation in project activities. Implementation of all the GAP activities is aligned and meant to support implementation of Myanmar Agricultural Development Strategy, MCCSAP and the NSPAW.

83. **GAP Implementation.** Overall responsibility for GAP implementation, monitoring and reporting rests with the EA. MOALI will appoint a full-time gender focal point (preferably from the existing DSW gender focals network) who will work closely with key government and development partners. The DSW will ensure that implementation of GAP activities is aligned and supports the NSPAW. The MNCW will be involved as key partner in the GAP implementation and monitoring.

84. In lieu of a national gender consultant, it is proposed to hire a local organization or firm with strong experience in gender at the community level/engaging women in rural development that can provide specialized support services in gender such as the Gender Equality Network (GEN) or SEGRI (Socio-Economic & Gender Resource Institute). This local organization/firm will be responsible for undertaking the regular tasks and responsibilities involved to support the PMU in the implementation, monitoring and reporting of the gender action plan (detailed terms of reference is in Appendix 5). This would be the preferred approach for long-term capacity and sustainability reasons. A provisional amount of \$112,000 (inclusive of contingencies) is allocated as part of the project implementation consulting firm for procuring such specialized support services in gender, which is the equivalent of 30 person-months of a national gender consultant.

85. The GAP activities will be integrated in the work plans and budget prepared annually. The project monitoring and evaluation framework will integrate gender sensitive indicators included in the design and monitoring framework (DMF) and the GAP. During project implementation, regular meetings will be conducted with women farmers organized by gender focal points and DSW with the support from the local firm/organization to identify their concerns and specific training needs, and to ensure that they are included as demonstration and targeted farmers for the adoption of climate-friendly techniques.

86. **Budget for GAP Implementation.** Adequate financial resources have been allocated to implement the GAP. Implementation of its activities are covered by the budget allocated under the corresponding outputs, including costs to (i) facilitate and increase women's participation in the project activities (e.g. such as series of shorter training sessions at venue closer to their communities); (ii) implement, monitor and report GAP; and (iii) carry out the gender analysis of the targeted value chains (international consultant for 3 person-months; TOR in Appendix 5).

Table 18: Gender Action Plan

Project Outputs	Gender activities/actions	Performance indicators/targets	Process oriented suggestions
Output 1: Critical agribusiness value chain infrastructure improved and made climate-resilient			
Gender Objectives 1.1 Ensure critical agribusiness VC infrastructure is responsive to the needs of women and men	1.1.1 Involve women, voluntary gender focals and women's organization representatives actively and meaningfully in each individual event for consultations and planning activities related to improvement and climate resiliency of critical infrastructure and procurement of new machinery and equipment supported by the project.	1.1.1 (i) Women are at least 50% of participants in most consultation/planning events (in at least 80% of such events) organized at community level ¹⁶ ; (ii) Consultation reports/minutes include information on infrastructure related needs expressed by female participants	<ul style="list-style-type: none"> - This would mean paying attention to the following aspects: meetings are held at a convenient time for women taking into account their workloads and domestic responsibilities, adequate venue (i.e. centrally located, in place where women may feel comfortable attending such as a community center), and information is shared with visual aids/illustrations, sessions are led by female facilitators, informal child care during meetings is provided, etc. - This may also mean that brainstorming sessions to identify needs in terms of infrastructure and physical design features to be integrated in infrastructure are organized first with separate groups of female and male participants before sharing and decision being made in plenary with female and male participants mixed. - Ensure decision-making process is participatory and takes into account the needs that were expressed by female participants.
	1.1.2 As part of consultation/planning activities, raise awareness about possibility to obtain grant (90% with 10% beneficiaries' co-financing rate) for irrigation.	1.1.2 Number of households and proportion of female-headed households benefiting from irrigation grant.	
	1.1.3 Integrate physical design features that are addressing women's needs into improved climate-resilient VC infrastructure where relevant - including procurement of time and labor saving equipment, machinery and technology.	1.1.3 Number and types (concrete examples) of physical design features that are addressing women's needs integrated into improved climate-resilient VC infrastructure, equipment and machinery.	<ul style="list-style-type: none"> - Gender responsive physical designs in improved infrastructure related to irrigation, drainage, buildings, farm roads, farm and post-harvest machinery and equipment, seed testing equipment, etc.; height, location and design of facility/equipment; sanitation facilities in buildings. - Gender-responsive is defined here as: (i) based on needs and interest of female farmers; (ii) that reduce time and labor especially for women farmers; (iii) and, give women more choices in their productive and reproductive spheres.
1.2 Enhance income generating	1.2.1 Ensure women benefit from jobs created through the project: (i) Infrastructure	1.2.1 (i) For civil works: (a) At least 40% of paid works are allocated for	<ul style="list-style-type: none"> - This would mean that information about such employment opportunities will be communicated through adequate channels (radio, print,

¹⁶ Point of reference: 52% to 54% female population in 3 targeted regions as per 2014 Myanmar Population and Housing Census.

Project Outputs	Gender activities/actions	Performance indicators/targets	Process oriented suggestions
opportunities for women	construction/rehabilitation/renovation of farm roads, minor canals, community reservoirs, installation of tube wells (skilled/unskilled jobs); (ii) Operation and maintenance (O&M) of improved infrastructure, and procured machinery and equipment e.g. community farming machinery and buildings	landless/poor women; ¹⁷ (b) Equal pay for work of equal value for both women and men (daily wage). ¹⁸ (ii) For O& M jobs: (a) At least 30% of O&M jobs are for women; ¹⁹ (b) Equal pay for work of equal value for both women and men (daily wage).	announcements at community centers) to reach out women in the targeted areas, and that special efforts (i.e. outreach to women's groups, ads that specifically state that women are encouraged to apply) are made to attract potentially interested women in skilled and unskilled construction work and in operation and maintenance, and competent women in management positions. - As Contractors are key to the achievement of these indicators, discussions about labor selection should be conducted with them to ensure women benefit from jobs. They will also be responsible for hiring women as per the conditions set out in bidding documents, which should include the targets for hiring women. Core labor standards will be complied with, especially equal pay for work of equal value (verified through policies, employment records). Other measures that are needed will be taken (e.g. child care arrangements even if informal) so that interested women can grasp such opportunities.
Output 2: Climate smart agriculture and agribusiness promoted			
Gender Objectives 2.1 Strengthen women farmers' involvement along climate-friendly agribusiness VCs	2.1.1 Encourage women to become 'contact farmers' and train them through farmer field schools and on-farm demonstrations for adopting good agricultural practices and CSA techniques including for farming of nutrition rich crops, dissemination of improved inputs (seeds, fertilizers and pesticides) and promoting farm mechanization	2.1.1 Number and proportion of female 'contact' farmers.	

¹⁷ Point of reference: women's current involvement is about 40% in similar infrastructure-related work in rural areas under the Community-Driven Development (CDD) national wide project.

¹⁸ 2017 baseline: Differences in wages paid to women and men in agriculture: women between \$1 and 2.5/day, men between \$1.5 and 3/day (Livelihoods and Food Security Trust Fund. 2012. Baseline Survey Results. Yangon). Daily wage for unskilled labor in Pakokku industrial zone: women \$3.5 to 4, and men \$5. TRTA detailed gender analysis 2017.

¹⁹ CDD project assigned 20% to 40% of women in O&M.

Project Outputs	Gender activities/actions	Performance indicators/targets	Process oriented suggestions
	2.1.2 Involve women farmers/seed growers/ collectors/processors/agro-dealers/exporters actively and meaningfully in each individual event for capacity building activities in agribusiness, GMP, GHP, HACCP and business plan development.	2.1.2 (i) At least 40% of participants are women in the majority of events for capacity building activities targeted at farmers; ²⁰ (ii) At least 50,000 farmers (40% women) trained in CSA, GAP and agribusiness skills; ²¹ (iii) At least 35,000 farmers (40% women) adopt good agricultural practice standards for bean, pulse and oilseed production. For O&M: (iv) At least 50,000 farmers (of which 30% women) adopt water use efficient technologies and develop capacity to operate and maintain small scale irrigation schemes; (v) At least 500 farmers (at least 30% women) trained in farm machinery operation and maintenance.	This would mean paying special attention to the following aspects: adequate venue, timing, duration, the way that invitation communicated (e.g. not exclusively to head of household), methodology, use of visual aids and other illustrated materials, use of female and male facilitators/demonstrators and extension agents who are trained in gender and CSA, arrangements for informal child care offered, etc.
	2.1.3 Ensure women access the Agriculture Digital Finance Service through their participation and decision making in the credit package for supporting purchase of good agricultural practices-based farm inputs.	2.1.3 (i) At least 35,000 households (156,000 persons, 80,000 female) benefit from agricultural digital finance to access improved agricultural inputs, farm mechanization services and off-farm livelihood options; (ii) 40% of direct beneficiaries of the seasonal credit facility (debit card holders) are women (footnote 17).	- This would mean that women should be provided with adequate information about the seasonal credit facility, their rights and procedures, and encouraged to register either in their name (instead of the head of household when they access finance), or in the names of both spouses. - The community-driven development processes used for the identification of beneficiaries/selection criteria will need to take into account the special needs and constraints of women farmers and female-headed households for accessing finance. - It will also be important to ensure a fair proportion of women are involved as part of the service suppliers network.
	2.1.4 In order to raise awareness on nutrition, conduct cooking demonstration sessions with the involvement of health workers, DOA extension staffs and teachers for	2.1.4 (i) At least two villages of each township in project areas conduct cooking demonstration sessions and hold a cooking competition annually; (ii) Village administration staff, village key	- This would mean that project nutrition focal, health workers, teachers, DOA extension staffs will lead the selection of nutrient-dense foods from local market or backyard vegetable garden and villagers (women and men; can be separate groups) will cook for

²⁰ Point of reference: Women's share of the population aged 15-64 employed in agriculture, forestry and fishery is 36.5% (vs. 63.5% of men) as per 2014 Myanmar Population and Housing Census. 66% of employed women work in agriculture and 51% of employed men work in agriculture (DFAT Investing in Women Design Phase-Aide Memoires-2015).

²¹ 2017 baseline: 0.

Project Outputs	Gender activities/actions	Performance indicators/targets	Process oriented suggestions
	utilization of nutrient-dense foods, and organize cooking competitions.	influencers, women, children and at least 40% of men participate in annual nutritious cooking competition session.	competition of most nutritious dishes. Special attention will be given to involve men in these activities. - This would also mean paying attention to the following aspects: convenient time and adequate venue for male and female farmers. - Explore synergies with nutrition behavioral project of NWAFF.
2.2 Ensure female staff benefit from capacity-building activities related to climate-friendly agribusiness VCs	2.2 Ensure relevant female staff participate in capacity-building activities that are targeted at government officials at regional and local levels with regard to climate-friendly agribusiness VCs such as CSA, certified seed production and testing, quality and safety testing, farm mechanization.	2.2 Participation of female and male staff in trainings at national and local levels in same proportions as share of women and men in target groups. ²²	
Output 3: Enabling environment for climate-friendly agribusiness enhanced			
Gender Objectives 3.1 Institutionalize gender mainstreaming in the climate-friendly agribusiness VCs sector	3.1.1 At project inception, conduct a gender analysis of the value chains to understand different roles of women and men and women's preferences and constraints (including for female headed households) for each of the targeted VCs and develop a set of clear recommendations to strengthen women's involvement along the different VCs.	3.1.1 One report prepared with clear recommendations based on gender analysis of the targeted value chains.	Separate meetings and discussions will be held with women for land use survey, off-farm livelihood survey, agribusiness policy research, and the gender analysis of the targeted VCs (with at least 50% women interviewed/participating in the surveys/research). This would also mean that gender stakeholders (gender network, DSW, and women's organizations) participate in policy committees and meetings.
	3.1.2 Integrate key recommendations from gender analysis of VCs into agribusiness policies and other related documents prepared under the project.	3.1.2 At least three climate-friendly and gender-responsive agribusiness policies formulated that integrate key recommendations from the gender analysis.	
	3.1.3 Integrate a session on gender equality in climate-friendly	3.1.3 (i) Number of sessions provided on gender equality in climate-friendly	This is meant to inform relevant policy-makers and the formulation process of the agribusiness policies.

²² Point of reference: Proportion of female staff employed in the Ministry of Agriculture, Livestock and Irrigation is 35% (Ministry of Planning and Finance. 2016. Myanmar Statistical Yearbook). Within the Department of Agriculture (DOA), women account for about approximately one third of total extension officers. TRTA detailed gender analysis 2017.

Project Outputs	Gender activities/actions	Performance indicators/targets	Process oriented suggestions
	agribusiness VCs (based on gender analysis report mentioned above) into the training program and awareness raising activities for project stakeholders (i.e. relevant departments in MOALI, agricultural extension officers, local administrations and leaders, MNCW's voluntary gender focal).	agribusiness value chains; target groups; number of people trained disaggregated by gender; (ii) At least 3 sessions conducted for policy-makers to inform the formulation process of the climate-friendly and gender-responsive agribusiness policies.	Nevertheless, sessions on gender equality in climate-friendly agribusiness VCs are also expected to be conducted at local levels as part of other training activities to ensure extension agents and local agriculture officers understand the importance of reaching out to women farmers with inputs and promoting gender equality.
	3.1.4 Raise awareness about existing affordable credit facilities including agricultural digital finance service among women farmers, women-led and/or owned enterprises*, and staff in financial institutions. As part of the activities targeted at staff from financial institutions: raise awareness about specific constraints faced by women in accessing credit and the need for developing women friendly financing products and services.	3.1.4 (i) Number and type of activities conducted; types of communication channels and materials used, and, number and proportion of women participants (target for farmers: 50% women); (ii) 30% of staff from financial institutions trained in green finance are women. ²³	
	3.1.5 Strengthen linkages between women-led and/or owned farms/enterprises and agribusiness industry through supporting their participation in project activities such as provision of weather, market and financial services information to increase their access to market information, and development of farm standards and codes of practice, including for export standards.	3.1.5 (i) Number and type of activities conducted; number and proportion of women participants; (ii) Weather, market and credit information systems at DOP upgraded to provide timely information to at least 50,000 community-level supply chain stakeholders, including 25,000 women; ²⁴ (iii) At least 100 rice millers, and 50 pulses/beans/sesame processors and exporters, including 30% women-led and/or owned,* adopt GMP and HACCP standards. ²⁵	This would mean ensuring access to market information for both women and men farmers and enterprises and find out what are the most appropriate channels to reach women farmers and enterprises including use of ICT. 'May Doe Kabar' could be one of the stakeholders.
	3.1.6 Raise awareness (for local administrations and communities)	3.1.6 At least 1 awareness raising campaign per year on land use and land	This would mean paying special attention to the following aspects: adequate venue, timing, and

²³ 2017 baseline: 0.

²⁴ 2017 baseline: not applicable.

²⁵ 2017 baseline: 0.

Project Outputs	Gender activities/actions	Performance indicators/targets	Process oriented suggestions
	about land law reforms and National Land Use Policy, land rights and promote joint titling for land allocation to the poor and landless women and men. 3.1.7 Ensure women's active participation in participatory land use/management planning at township and village levels.	rights, with 50% women participants in sessions organized at community level. 3.1.7 50% of women participants in land use/management planning meetings in townships and villages.	duration of sessions/meetings. For land use/management planning meetings: this would mean providing adequate information to participants so that they clearly understand the objectives of the meetings. There may be a need to revise the format for land registration to allow sufficient space for registration on both husband and wife's names.
	3.1.8 Actively involve MNCW and voluntary gender focals at community level as key partners in project implementation and monitoring, especially for the GAP activities.	3.1.8 MNCW and its voluntary gender focals are well aware of the GAP activities.	- In places where MNCW does not have voluntary gender focals yet, select one active woman in targeted community to act as voluntary gender focal. Young female graduates in the villages may be interested to take up the role of voluntary gender focal. - Implementation of the GAP activities is meant to support implementation of the National Strategic Plan for the Advancement of Women 2013-2022.
Project management gender related activities:			
<ul style="list-style-type: none"> • Appoint a project gender focal in EA MOALI (preferably from the existing DSW gender focals network); and procure specialized support services in gender to support IAs in GAP implementation, monitoring and reporting. • Translate the GAP in local language • Ensure GAP activities are integrated into annual project work plans and budgets. • Work closely with support services that will be recommended by MNCW as specialized in gender and rural development to build capacity of EA/IAs staff in gender analysis and mainstreaming, and support GAP implementation, monitoring and reporting. • Collect and analyze data disaggregated by sex where relevant and integrate gender sensitive indicators (from the DMF and GAP) in the Project Performance Monitoring System. • Ensure regular monitoring and reporting (on quarterly basis to ADB) on the progress of GAP implementation. 			

CSA=climate smart agriculture; DOA = Department of Agriculture; EA = executing agency; IA = implementing agency; ICT = information and communications technology; GAP= Good Agriculture Practice; GHP =good hygienic practices; GMP = good manufacturing practice; HACCP= Hazard Analysis and Critical Control Points; MNCW = Myanmar National Committee for Women; VC = value chain.

* Women-led and/or owned enterprises are those with at least one of the following: (i) at least 50% of senior managers are women, (ii) at least 50% of enterprise ownership is controlled by women, (iii) at least 50% of the staff are women.

B. Social Dimensions of the Project

87. **Consultation and Participation Plan.** The project's consultation and participation plan will:

- (i) fully disclose information on the proposed project and subprojects, its components, and its activities with the beneficiary communities and stakeholders;
- (ii) obtain information about the opinions, needs and priorities of beneficiary communities and stakeholders;
- (iii) solicit input and feedback on beneficial and mitigating measures;
- (iv) encourage the participation of beneficiary communities and stakeholders in activities that affect them, such as civil works construction, enterprise support actions, awareness raising activities, and monitoring;
- (v) obtain the consent and cooperation of beneficiary communities and stakeholders for activities required to be undertaken for project planning and implementation;
- (vi) establish a clear, easily accessible and effective grievance redress mechanism; and
- (vii) ensure transparency in all project activities.

88. The various stakeholders, mechanisms for participation, entities responsible, indicative schedules and resources are set out in the Consultation and Participation Plan which is presented separately.

89. **Labor, HIV/AIDs, and other social risks.** The relevance of the project for the country's labor market is low and not significant. Core labor standards by contractors will be adhered to for all infrastructure works during the project lifetime. Employment opportunities for ID-Poor households and women will be available. The impact of risk from communicable diseases (HIV/AIDS) is low and the impact of other social risks such as human trafficking is not applicable.

IX. PERFORMANCE MONITORING, EVALUATION, REPORTING, AND COMMUNICATION

90. The implementing agencies will be responsible for monitoring project progress and evaluating project outputs. Monitoring and evaluation will be in accordance with the design and monitoring framework (DMF) and each implementing agency will be responsible for regular reporting, with the PMU producing a consolidated report for the Ministry of Planning and Finance (MOPF) and ADB.

A. Project Design and Monitoring Framework

Impact the Project is Aligned with:			
Agricultural competitiveness improved (Agriculture Development Strategy; Agriculture Sector's Second Five-Year Plan; and National Export Strategy). ^a			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
Outcome Productive and resource efficient agribusiness value chains in project areas developed	By 2027: a. Annual income of targeted households increased by at least 20% (2017 baseline: MMK900,000) b. Crop yields increased by at least 25% (2017 baseline: monsoon Paw San rice seed yield: 2.6 tons/ha and HYV rice seed 3.4 tons/ha; chickpea: 1.6 tons/ha; green gram 1.1 tons/ha; and sesame 0.8 tons/ha) c. At least 50 agribusinesses became resource efficient in terms of water savings (5%-10%) and reduction in post-harvest losses (10%) through adoption of GMP (2017 water savings baseline = 0%; post-harvest losses baseline = 25%) d. Household Food Insecurity Experience Scale declined by 5% (2017 baseline = 17.8%) ^b	a-b. MOALI agricultural census c.-d. Annual PPMS and M&E reports	Failure of the government to sustain policy reforms for agribusiness promotion
Outputs 1. Critical agribusiness value chain infrastructure improved and made climate-resilient	By 2025: 1a. 10 DOA seed farms produced at least 3,000 tons of HYV rice seed, 130 tons of chickpea, 180 tons of green gram, and 70 tons of sesame annually (2017 baseline: 378 tons HYV rice, 25 tons of chickpea, 36 tons of green gram, and 20 tons of sesame) to benefit at least 156,000 persons (80,000 female members) in 35,000 households (2017 baseline: 0) 1b. About 13,000 ha of additional area brought under climate smart water management through rehabilitating 130 km of tertiary canals (6,000 ha), 15 community reservoirs (1,000 ha) and installing 8,000 shallow tube wells (6000 ha) to benefit at least 156,000 persons (80,000 female members) in 35,000 households (2017 baseline: 0)	1a. DOA Annual reports 1a-d. PPMS reports	Reduced budget allocations for O&M leading to premature infrastructure deterioration Catastrophic climate events damage infrastructure or interrupt implementation

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
2. Climate-smart agriculture and agribusiness promoted	1c. At least 300 km of farm roads rehabilitated to climate-resilient condition (2017 baseline: 0)	1d. MOALI and MOC annual reports 2a-f. PPMS reports	
	1d. Crop product quality and safety testing infrastructure in pesticide testing laboratory, FSTLAB and CTQM upgraded leading to ISO 17025 certification to test at least 2,500 samples per year (2017 baseline: 1,100)		
3. Enabling environment for climate-friendly agribusiness enhanced	2a. At least four (1 rice, 1 chickpea, and 2 sesame) climate-resilient varieties released (2017 baseline: 0)	2f. Participating financial institution service provider records 3a-f. PPMS reports	
	2b. Skills and knowledge of at least 300 lead seed growers in certified seed production, and 50,000 farmers (40% women) in CSA, GAP and agribusiness improved (2017 baseline: 0)		
	2c. At least 35,000 farmers (40% women) adopted GAP standards for bean, pulse and oilseed production (2017 baseline = 0)		
	2d. At least 50,000 farmers (30% women) adopt water use efficient technologies and develop capacity to operate and maintain small scale irrigation schemes (2017 baseline: 0)		
	2e. At least 50 agribusiness dealers and service providers, and 500 farmers (30% women) trained in farm machinery operation and maintenance (2017 baseline: 0)		
	2f. At least 35,000 households (156,000 persons, 80,000 females) benefitted from agricultural digital finance to access improved agricultural inputs, farm mechanization services and off-farm livelihood options (2017 baseline: 0)		
	3a. Agribusiness policy unit established in DOP		
	3b. At least three climate-friendly and gender-responsive agribusiness policies, ^c including a PPP framework focusing on agribusinesses formulated (2017 baseline: 0)		
	3c. At least 100 rice millers, and 50 pulses, beans or sesame processors and exporters, including 30% women-led or owned, ^d adopted GMP and HACCP standards (2017 baseline: 0)		
	3d. Green finance skills and knowledge of at least 50 staff, including 30% women, from participating financial institutions improved (2017 baseline: 0)		
	3e. Weather, market and credit information systems at DOP upgraded to provide timely information to at least 50,000 community-level		

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
	supply chain stakeholders, including 25,000 women (2017 baseline: Not available) 3f. Land administration systems and services skills and knowledge of at least 50 staff, including 30% women, improved ^e (2017 baseline: 0)		

Key Activities with Milestones

1. Critical agribusiness value chain infrastructure improved and made climate-resilient

- 1.1 Upgrade infrastructure in ten DOA seed farms for production of improved and climate-resilient seed (Q3 2019–Q4 2023).
- 1.2 Rehabilitate irrigation and water management infrastructure (tertiary canals, community reservoirs, and shallow tube wells) to climate-resilient condition (Q2 2019–Q2 2025).
- 1.3 Improve connectivity and farm mechanization through climate-resilient farm road networks (Q1 2020–Q3 2022).
- 1.4 Strengthen infrastructure for agricultural quality and safety testing (Q3 2019–Q4 2022).

2. Climate-smart agriculture and agribusiness promoted

- 2.1 Deploy climate-resilient varieties (Q3 2019–Q2 2025) [G/CD].
- 2.2 Conduct training for farmers, SMEs and private sector on CSA (Q3 2019–Q1 2025) [G/CD, GE].
- 2.3 Implement agricultural digital finance service for agricultural inputs, farm mechanization services and off-farm livelihood opportunities (Q1 2020–Q4 2024).

3. Enabling environment for climate-friendly agribusiness enhanced

- 3.1 Formulate climate-friendly agribusiness policies and standards, including public-private partnerships, contract farming, GAP and organic certification, and gender aspects (Q2 2019–Q4 2023) [G/CD].
- 3.2 Improve skills of financial institutions on green finance, including integration of climate risk screening in lending activities (Q2 2020–Q4 2024) [G/CD, GE].
- 3.3 Promote multimedia-based weather, market and credit information networks in target townships (Q1 2020–Q4 2023) [G/CD, GE].
- 3.4 Improve the delivery of land administration services through capacity building of regional and township administrations (Q1 2020–Q2 2025) [G/CD, GE].

Project Management Activities

Mobilize project implementation consultants and procure equipment, furniture and vehicles (Q1–Q2 2019). Establish PPMS, and conduct needs assessment for specific project management skills (Q1–Q2 2019). Customize learning modules to fit participant needs (Q3 2019) [G/CD, GE]. Deliver and evaluate training courses for 200 staff (35% female) from various levels (national, provincial and district) in project management, procurement, financial management, gender, social and environmental safeguards (Q2 2020–Q4 2024) [G/CD, GE].

Inputs

ADB: \$40,500,000 (loan)
Global Agriculture and Food Security Program: \$22,000,000 (grant)
Government: \$1,430,000 (in-kind)
Beneficiaries: \$990,000

Assumptions for Partner Financing

GAFSP: \$5,000,000 (parallel financing as capacity building technical assistance)

ADB = Asian Development Bank; CSA = climate smart agriculture; CTQM = commodity testing and quality management; DOA = Department of Agriculture; DOP = Department of Planning; FAO = Food and Agriculture Organization of the United Nations; FSTLAB = food safety testing laboratory; G/CD = governance and capacity development; GAP = good agricultural practices; GE = gender equity; GMP = good manufacturing practices; HACCP = hazard analysis critical control points; HYV = high yielding variety; M&E = monitoring and evaluation; MMK = Myanmar Kyat; MOALI = Ministry of Agriculture, Livestock and Irrigation; MOC = Ministry of Commerce; NA = not applicable; PPMS = project performance monitoring system; PPP = public-private partnership; SME = small and medium enterprises; Q = quarter.

- ^a Government of Myanmar. Ministry of Agriculture, Livestock and Irrigation. 2018. *Myanmar Agriculture Development Strategy and Investment Plan (2018-2023)*. Nay Pyi Taw; Government of Myanmar. 2016. *Agriculture Sector Second Five-Year Plan (2016/2017–2020/2021)*. Nay Pyi Taw; and Government of Myanmar. 2014. *National Export Strategy (2015-2019)*. Nay Pyi Taw.
- ^b Developed by Food and Agriculture Organization of the United Nations, Food Insecurity Experience Scale is a measure of access to food at the level of individuals or households. It is based on a well-grounded construct of the experience of food insecurity composed of three domains: uncertainty/anxiety, changes in food quality, and changes in food quantity.
- ^c As women are more vulnerable to the impacts of climate change, any policies developed for public-private-community partnerships or contract farming arrangements for promoting agribusinesses under output 3 will be responsive to the needs, constraints and vulnerabilities of women. The detailed gender analysis of the value chains proposed in the gender action plan is expected to inform this process.
- ^c Women-led or owned enterprises are those with at least one of the following: (i) at least 50% of senior managers are women, (ii) at least 50% of enterprise ownership is controlled by women, (iii) at least 50% of employees are women.
- ^s Land administration systems and services, inter alia, include (i) updating cadastral map coverage, (ii) re-establishing land records; (iii) registering land transactions; (iv) confirming land tenure, and (v) issuing land use certificates or titles.

Source: Asian Development Bank.

B. Monitoring

91. **Project performance monitoring:** A project performance monitoring system (PPMS) has been developed (Appendix 2) based on key indicators and targets outlined in the project design and monitoring framework (DMF). The PPMS will (i) assess the progress in achieving each project output and project outcome according to the performance targets and indicators indicated in DMF including planned activities, and (ii) highlight any identified risks that are detrimental to achieving the outputs. It shall be implemented by the project management unit (PMU) in conjunction with the implementing agencies and support from the project implementation consultants (PIC) in accordance with ADB's Project Performance Monitoring System Handbook within six months of loan effectiveness.²⁶ The PPMS procedures, performance indicators, and their targets will be reviewed and approved by ADB. Benchmark review mainly focusing on secondary data will be conducted. With the help of PIC, the PMU will then undertake every six months quantitative and qualitative project-performance monitoring for each project activity to evaluate the delivery of planned facilities and the project benefits that accrued.

92. **Compliance monitoring:** A number of assurances have been given by the government to ensure smooth implementation of the project. ADB will monitor compliance with covenants during the project implementation through regular review missions, quarterly progress reports submitted by the PMU, and review of project accounts and procurement procedures. ADB will also monitor the achievements of each output and outcome based on the performance indicators with targets, and each activity based on milestones indicated in the DMF through a project management information system (i.e. eOps).

93. **Safeguards monitoring.** The supervision and monitoring of environmental activities during the pre-construction, construction and operation phases are the functions of the PMU. To support the EA and IA in preparing environmental safeguards documents and implementing the environmental management and monitoring plans of subprojects, a safeguards officer will be assigned to the PMU. Safeguards officer will be assisted and trained by the international and national environment specialists from the PIC.

94. The PMU and the provincial implementers will ensure that IEE findings are locally disclosed; IEEs are submitted to ADB for prior review and clearance; no objections to implement will be sought from the PSC; EMP measures are incorporated into civil works designs and

²⁶ ADB's project performance reporting system is available at <http://www.adb.org/Documents/Slideshows/PPMS/default.asp?p=evaltool>

contracts, and that their IAs will undertake the required environmental monitoring and reporting and perform their assigned roles in the grievance redress mechanism.

95. The implementing agencies, assisted by PIC, will prepare and submit to the executing agency semi-annual reports on the environmental identified during implementation. The report will cover environment performance based on implementation of the environmental management plans. The executing agency, through PIC, will be responsible for the consolidation and submission of the reports to ADB in accordance to the format and process described in the IEEs and EARF.

96. LARF details on monitoring and reporting requirements for involuntary resettlement. In essence, both internal and external monitoring will be conducted. PMU will be responsible for internal monitoring while an external monitoring agency will be hired to conduct external monitoring and evaluation for involuntary resettlement. Internal and external monitoring will produce bi-annual monitoring reports.

97. **Climate Change (Risk Category Medium):** The assessment of climate change risk for the overall project, as per the AWARE process, gives a category of medium risk. It is therefore important that the PIC that have responsibilities for infrastructure development and capacity building have sufficient climate change experience and capability to ensure and maximize adaptation possibilities, promote climate smart agricultural practices, and ensure that the project satisfactorily ensures that farmers are aware of the risks and the steps they can take to adapt.

98. **Gender and social dimensions monitoring:** Regular (semi-annual) monitoring of GAP implementation will be done during project implementation. The PPMS will monitor women's participation in all project capacity building, training events and meetings, for both female staff and women farmers. Sex-disaggregated data will be collected regularly wherever relevant (particularly in relation to project activities that are linked to specific gender actions, for which verifiable sources of data for monitoring will be available at community/village level), and gender specific and sensitive indicators from the DMF and the GAP will be integrated as part of the PPMS. The PMU will ensure regular monitoring and reporting (on quarterly basis to ADB) on the progress of GAP implementation; the ADB template to be used for GAP monitoring and reporting is included as Appendix 3.

99. Participatory monitoring of project impact will be implemented during mid-term of the project and this will include women's focus group discussion and interviews with women farmers and staff, to obtain quantitative and qualitative data. Household interviews will include adequate representation of female-headed households.

C. Evaluation

100. **Inception mission.** An inception mission will be conducted within three months of the loan signing to assess project readiness and implementation arrangements including establishment of PMU, IAs, opening of an advance account, status of the development of the PPMS, and progress of advance procurement actions including recruitment of the PIC firm and the contractor for the first three representative subprojects.

101. **Review mission:** ADB will conduct regular (i.e. at least twice per year) reviews throughout project implementation to (i) assess the progress of project activities and outputs and effectiveness of implementation arrangements, (ii) monitor safeguard compliance with ADB Safeguard Policy Statement (2009), (iii) review compliance with loan agreements and related

matters, (iv) follow up on decisions and actions agreed during previous review missions, and (v) resolve any project implementation issues that may arise.

102. **Midterm review mission:** A midterm review will be undertaken within 30 months of loan effectiveness or as when deemed necessary by the project team. This review will include a comprehensive evaluation of project implementation arrangements, impact from the pro-poor and gender initiatives linked to infrastructure development, detailed evaluation of the scope and implementation process and progress of subprojects, allocation by local administrations for the maintenance of the infrastructure developed under the project, feedback from the stakeholders, performance of consultants, capacity building progress, and possible reallocation of loan proceeds. Particular attention will be paid to the (i) assessment of project performance and achievement against targets and indicators in the DMF; (ii) review the initial outcomes, benefits, and impact of the project, and (iii) identify gaps, if any, and recommend necessary changes to strengthen implementation arrangements or modify project design.

103. **Project completion review mission:** Within six months of physical completion of the project, ADB will field a project completion review mission to commence preparation of the government project completion report (PCR). The mission will (i) assess the project performance against all targets, indicators, and benchmarks (including any revised at the midterm review); (ii) evaluate initial benefits and outcome of the project across outputs, and (iii) identify any incomplete activities and agree on the necessary actions, as well as to review compliance with ADB requirements and loan covenants.

D. Reporting

104. The PMU will provide ADB with (i) quarterly progress reports in a format consistent with ADB's project performance reporting system (an outline of the progress report is in Appendix 2); (ii) consolidated annual reports including (a) progress achieved by output as measured through the indicator's performance targets, (b) key implementation issues and solutions, (c) updated procurement plan, and (d) updated implementation plan for the next 12 months; and (iii) a project completion report within six months of physical completion of the project. To ensure that projects will continue to be both viable and sustainable, project accounts and the executing agency audited financial statement together with the associated auditor's report should be adequately reviewed.

E. Stakeholder Communication Strategy

105. A stakeholder communication strategy was prepared (Table 19), drawing on best practices outlined in ADB's Public Communication Policy.²⁷ It is based on principles of transparency, timeliness, meaningful participation, and inclusiveness. It will ensure that vulnerable groups, such as the poor and female-headed households, who risk marginalization, are provided with opportunities for receiving timely information, and can provide feedback during project implementation. Stakeholders include: (i) project direct and indirect beneficiaries with a focus on micro- and small-enterprises and small agri-businesses; (ii) civil society organizations; (iii) community groups and individuals living in the project area; (iv) private agencies and service providers who share an interest in the outcomes and/or impacts of the project; and (v) government agencies with a role in implementation. The strategy serves to inform and support community development, enhance government capacity to deliver a positive project outcome, and enhance project benefits while mitigating any potential negative impacts.

²⁷ ADB. 2011. *Public Communication Policy 2011. Disclosure and Exchange of Information*. Manila.

Table 19: Stakeholder Communication Strategy

Objective	Stakeholder Group	Function/Interest in Project	Messages	Means of Communication	Timeline	Responsibility	Resources
1 Ensure a good 2-way flow of information, and promote ownership over subproject activities and climate-friendly agribusiness value chains sector development	Beneficiary communities including farmer production groups, women and men farmers, cooperatives collectors, rice millers, village heads and village committees, local micro-credit institutions.	Direct beneficiaries of project; local authorities participating in implementation and follow-up of subprojects; beneficiaries of infrastructure; participants in agribusiness enterprise development; participants in technical and agriculture training, in workshops, study tours and skills and employment training.	<p>Local collaboration and support is fundamental to project effectiveness; information is to be shared openly and transparently; inputs into design and recommendations for improvements are welcome.</p> <p>Clear information on implementation arrangements and schedule of construction and civil works.</p> <p>Update on subproject progress and roles for any operation and maintenance after completion.</p> <p>Planned mitigation measures (including compensation rates, entitlements, grievance redress mechanism, road safety and noise/pollution control measures</p>	<p>The project will produce user-friendly posters at local level giving information about when consultation meetings are to be held, and also showing subproject plans and activities. Details of how and where to register feedback (e.g. with village head) is to be provided.</p> <p>Regular meetings between implementing agency & beneficiaries will be held every month for two-way flow of information about project activities, priorities and progress. Feedback from meetings will be logged, and feedback on follow-up actions will be reported at the following meeting. Village head, district Gender Focal Point and village committee will receive orientation from project staff regarding what to do when local community members give them feedback on subproject.</p> <p>Standard reporting formats to be used by local authorities, district Gender Focal Point and IA for providing project updates to beneficiaries on a regular basis so that information can be systematically transmitted to communities.</p> <p>Public information meetings, including regular updates by village head, district Gender</p>	<p>Regular ongoing information exchange between IA (Implementing Agency) and beneficiaries prior to initiation of activities.</p> <p>During initial phase of subproject preparation.</p> <p>During detailed project design phase.</p> <p>At kick-off workshop/meeting when project is launched</p> <p>Ongoing during implementation of activities and any construction and civil works.</p> <p>At completion in closing workshop at local level</p>	<p>EA, IAs, Gender Focal Points and other related ministries and departments, local government including village head and village committee</p> <p>Responsibility for producing information materials will be with IA. Responsibility for identifying best publicly accessible places is with village head.</p>	<p>Refer to Output 2, sub-component 2.2 (Capacity Enhancement) for source of funding for production of all communication materials and recruiting local communication consultant to design materials where necessary</p>

Objective	Stakeholder Group	Function/Interest in Project	Messages	Means of Communication	Timeline	Responsibility	Resources
			before and after construction).	<p>Focal Point and village committee at village level following any visits and meeting with IA and project consultants.</p> <p>Printed information about subproject in local language posted in accessible public areas, including information on how to provide comments or register grievances.</p> <p>Posters on information boards on upcoming training programs for agribusiness, technical training, skills training for employment, and small and micro-enterprise development.</p>			
2 Ensure an effective 2-way flow of project information to women beneficiaries and ethnic minority beneficiaries (where applicable).	Women, poor and vulnerable households, ethnic minority groups (where applicable)	As above	As above plus disseminate contents of GAP and EMDP (where applicable), and opportunities to participate in training in income generating activities.	<p>Separate meetings organized by district Gender Focal Point with women and with ethnic groups in local language, where applicable.</p> <p>Printed information about the project posted in local and accessible language (or visual depictions) posted in accessible public areas.</p> <p>Designation and provision of materials/toolkit to district Gender Focal Points for promotion/coaching in micro- and small enterprise development and disseminating information about agribusiness</p>	As above	As above	

Objective	Stakeholder Group	Function/Interest in Project	Messages	Means of Communication	Timeline	Responsibility	Resources
				opportunities from IA / project consultants			
3. Raise visibility and awareness of benefits of agribusiness development for inclusive growth and for building ownership over ongoing infrastructure development (e.g. infrastructure improvements) and also farmer production groups and cooperative development.	Beneficiary communities.	Direct and indirect beneficiaries of project.	Project investments and agribusiness promotion is beneficial to local economy, culture and gender equity.	<p>Media press releases and coverage about the project by local media –print, radio, and TV features (if possible).</p> <p>Signboards promoting visibility of MOALI (EA), ADB and local government collaboration for climate-friendly agribusiness and value chain development and improvements.</p> <p>Inaugurations of completed construction and civil works with promotional events at subproject sites.</p> <p>MOALI Website about project activities, progress and documents.</p>	<p>At project launch and midway through as tangible results are realized.</p> <p>Signboards at appropriate locations at the start of construction and through project implementation.</p>	IA, EA, district Gender Focal Points and village authorities	
4. Ensure an effective 2-way flow of project information to promote public-private partnerships for inclusive agribusiness growth and value chain development	Private sector agribusinesses and small and medium enterprises	Direct and indirect beneficiaries of project; partners in development activities.	Promote participation in agribusiness initiatives which will increase available supply of improved quality of crops, employment creation and initiatives to promote climate-friendly agribusiness value chain development	<p>Partnership in workshops / meetings / surveys on agribusiness development and marketing / promotion programs.</p> <p>Local Communications consultant will develop a unique dissemination/engagement plan as part of his/her core activities, including design and production of a full suite of marketing materials.</p>	Ongoing during implementation of project activities	EA / project implementation consultants	Refer to Output 2 sub-component 2.2 – Capacity Enhancement

Objective	Stakeholder Group	Function/Interest in Project	Messages	Means of Communication	Timeline	Responsibility	Resources
5 Ensure a good 2-way flow of project information and promote women's ownership over subproject activities and agribusiness development.	MOALI Gender Unit / Gender Focal Point	<p>Responsible for promoting gender equality and mainstreaming gender in agriculture sector</p> <p>Plays a role in overseeing gender inclusiveness in agricultural development in Myanmar</p> <p>Promote women's involvement and participation in micro and small enterprise development and employment training in the agriculture sector.</p>	<p>Key benefits, and gender equity of subproject activities and climate-friendly agribusiness and value chain development</p> <p>Specific benefits targeted to women</p> <p>Disseminate information on progress on gender equity</p>	<p>National Steering Committee meetings.</p> <p>Regular coordination meetings between IA, gender consultants and MOALI Gender Unit for implementing project GAP and recommending any improvements</p>	From outset of project and regularly throughout project lifetime.	Project Gender Consultants and MOALI Gender Unit and Sub-national Gender Focal Points	
6 Ensure a regular flow of project information and promote collaboration to complete constructed infrastructure and civil works.	EA (MOALI) staff; Government officials, contractors, and communities in the project areas.	Responsible for implementation and O&M of constructed infrastructure subprojects and civil works.	<p>Project design, key project benefits, implementation arrangements and schedule of construction and civil works</p> <p>Main project impacts (positive and negative).</p> <p>Planned operation and maintenance measures.</p>	<p>Project Steering Committee Meetings.</p> <p>Regular coordination meeting for detail design of construction and civil works, and implementation of project activities.</p> <p>Regular flow and sharing of documentation.</p> <p>Project website.</p>	From outset of project and throughout implementation.	EA and IA	

Objective	Stakeholder Group	Function/Interest in Project	Messages	Means of Communication	Timeline	Responsibility	Resources
7. Ensure understanding of project impacts, outcomes and outputs and importance of theme of inclusive growth.	Beneficiaries; MOALI; local authorities such as village heads, village committee, district Gender Focal Points, (village authorities and Gender Focal Points will receive orientation to develop their understanding of project impacts)	Responsible for project implementation	<p>Effective execution of their tasks, regular follow-up, monitoring and reporting progress and constraints is important for project success.</p> <p>Community collaboration and inclusive approach is essential to effective project delivery.</p>	<p>Dissemination of Project Steering Committee decisions and strategic documents.</p> <p>Training in project management and other institutional strengthening activities.</p> <p>Formats and simple chart (s) showing responsibilities for project implementation, flow of funds, flow of activities, monitoring and follow-up.</p> <p>Project website (managed under MOALI website)</p> <p>Regular email updates on project activities and relevant developments in agribusiness.</p> <p>Sharing of information on project budget allocations; transparent process for selection for study tours, regional visits and other benefits and institutional strengthening activities.</p> <p>Gender and EMDP implementation training.</p>	From outset of project and throughout implementation.	EA and IA	

EA = executing agency; EMDP = ethnic minority development plan; GAP = gender action plan; IA = implementing agency; MOALI = Ministry of Agriculture, Livestock and Irrigation; O&M = operation and maintenance.

X. ANTICORRUPTION POLICY

106. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the project.²⁸ 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 and/or entities on ADB's anticorruption debarment list are ineligible to participate in ADB-financed activity and may not be awarded any contracts under the project.²⁹

107. To support these efforts, relevant provisions are included in the loan agreement and grant agreements and the bidding documents for the project. 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 PIC to advise and assist in the procurement of goods and services, and the engagement of other consultants. The project will also establish a website in which it will disclose implementation progress, bid notifications and their results, and provide grievance mechanism against any corrupt practice. References on ADB's Anticorruption Policy can be accessed through the following link: <http://www.adb.org/integrity/>. Guidelines on governance and anticorruption action plan are also available.³⁰

XI. ACCOUNTABILITY MECHANISM

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

XII. RECORD OF CHANGES TO THE PROJECT ADMINISTRATION MANUAL

109. All revisions and/or updates during the course of implementation should be retained in this section to provide a chronological history of changes to implemented arrangements recorded in the PAM, including revision to contract awards and disbursement s-curves.

²⁸ Anticorruption Policy: <http://www.adb.org/Documents/Policies/Anticorruption-Integrity/Policies-Strategies.pdf>

²⁹ ADB's Integrity Office web site: <http://www.adb.org/integrity/unit.asp>

³⁰ Governance and Anticorruption Action Plan II Guidelines. <http://www.adb.org/Documents/Guidelines/GACAP-II-Guidelines.pdf>. See also Sourcebook: Diagnostics to Assist Preparation of Governance Risk Assessments. <http://www.adb.org/documents/books/Diagnostics-to-Assist-Preparation-of-GRAs/default.asp>.

³¹ Accountability Mechanism. <http://www.adb.org/Accountability-Mechanism/default.asp>.

IMPLEMENTATION PROCEDURES

A. Output 1: Critical agribusiness value chain infrastructure improved and made climate-resilient

1. This output involves infrastructure improvements to increase farm productivity and crop diversification, enhance quality of agricultural products, and increase incomes for value chain stakeholders. By incorporating climate smart agriculture (CSA) technologies, including irrigation and water management investments and supporting seed farms to provide quality climate-resilient seeds, the crop intensity is expected to increase. Investments in enhanced capacity for testing product quality and incorporating food safety measures will protect consumers and increase potential for accessing new markets and increasing exports within and beyond Greater Mekong Subregion (GMS), which will create a premium incentivising investment further up the value chain.

2. Key activities include (i) upgrading infrastructure (water management, farm roads, buildings, farm and post-harvest machinery and equipment, seed testing equipment, agrometeorological stations, etc.) in ten Department of Agriculture (DOA) seed farms³² for production of registered seeds of improved and/or climate-resilient varieties, for sale to private producers of certified seeds and eventually benefitting 156,000 farmers; (ii) renovating at least 130 km of tertiary canals, rehabilitating 15 community ponds and reservoirs, constructing at least 8000 shallow tube wells with some of them linked to drip and sprinkler technologies, and small-scale pumping to bring an additional 13,000 ha under irrigation benefitting at least 35,000 households; (iii) rehabilitating at least 300 km of farm feeder roads to climate-resilient condition to provide improved farm connectivity to markets and enable enhanced farm mechanization; and (iv) upgrading the safety and quality testing equipment and instrumentation in MOALI Plant Protection Division's Pesticide Testing Laboratory and Food Safety Testing Laboratory, and the Ministry of Commerce (MOC) Commodity Testing and Quality Management Laboratory to meet ISO 17025 standards, and providing food safety testing kits to DOA and the private sector. Appropriate adaptation measures will be included in the design of infrastructure to withstand impacts of climate change.

3. The project will support seed farms in promoting strong links with the private sector, marketing, and business development services. In addition, the lead seed growers and seed producer associations near seed farms will be encouraged to be integrated under a public-private partnership for seed multiplication being launched by the Livelihoods and Food Security Trust Fund (LIFT) to ensure a guaranteed market for lead seed growers. The project will also support the formation of, and train water user groups to operate and maintain tertiary canals, community reservoirs and other water management infrastructure.

4. The infrastructure investments will support the value chains of not only target commodities but also other crops and commodities in target areas. Interventions will incentivise investment in primary and secondary processing, leading to greater employment generation in the CDZ, including for youth and women, and helping to decrease rural-urban migration. The interventions will also promote public-private-community partnerships to enhance sustainability and equity. Women and other vulnerable groups will be proactively involved in the identification and implementation of gender- and nutrition-sensitive investments.

1. Activity 1.1: Upgrading infrastructure in ten Department of Agriculture (DOA) seed farms for production of improved and climate-resilient seed

³² Seed farms of the Department of Agricultural Research, including the Oilseed Crops Research Center in Magway, may be supported, subject to availability of funds.

5. This activity will support increased production of registered seeds at ten DOA seed farms by at least 20% during the monsoon season and at least 40% during the winter and summer seasons. This will be achieved through a package of infrastructure and equipment improvements. From the increased yield, the added registered climate-resilient seed is projected to total about 390 more tons of rice seed, 65 tons of sesame, and 122 tons of pulses and beans produced over the project period. At least 375 private seed growers, who will purchase and grow these registered seeds and benefit from improved irrigation infrastructure and farm feeder roads (see below), are projected to produce about an additional 500 tons of certified Paw San rice seed, 3000 tons of certified HYV rice seed, 130 tons of certified chickpea seed, 180 tons of certified green gram seed, and 70 tons of certified sesame seed each year. Approximately 156,000 farmers purchasing the certified seed will produce Paw San rice on about 6,715 hectares, HYV rice on about 38,278 hectares, chickpea on about 1,689 hectares, green gram on about 4,556 hectares, and sesame on about 4,759 hectares. To ensure efficient distribution networks for the sale of certified seed at scale to these farmers, seed farmers will be encouraged to sell through a public-private partnership for seed multiplication being launched by LIFT.

6. Myanmar's existing seed system lacks funds, technology, equipment, training, and other resources to meet seed market needs, especially for pulses and oilseeds. This has resulted in less than 1% of total farm-level seed demand being met—0.12% for sesame, 0.13% for green gram, and 0.2% for chickpea, and 0.6% for sunflower. Recently, LIFT signed a grant agreement with the Awba Group to establish a private seed company—Myanmar Allied Farmers Seed Company (MAFSCO)—to produce, process, and market seed of priority crops, particularly beans/pulses and oilseeds, with a focus to serve smallholder farmers in the Central Dry Zone (CDZ), where improved/quality seed is in high demand. MAFSCO will be a locally-owned, legally registered company that combines the organizational and governance principles of a cooperative with the legal structure and operating principles of a private company. MAFSCO will be structured as a joint venture partnership of Awba Group and a cooperative owned and controlled by farmers.

7. Total investment of the public-private partnership launched by LIFT-Awba group is about \$10.72 million including: (i) LIFT CAPEX of \$3.0 million; (ii) LIFT OPEX of \$3.75 million (\$2.5 million for project implementation and \$1.25 million for operational costs); and (iii) Awba Capital—\$3.97 million (including \$0.85 million in operational costs). LIFT CAPEX translates into \$3.0 million in farmer share capital while Awba share capital is \$3.12 million. The lead seed growers around seed farms will be encouraged to be integrated under this initiative.

8. The implementing agency for this intervention will be the DOA-Seed Division (SD) of MOALI which will prepare specifications for upgrades at the seed farms, with assistance from the project implementation consultants (PIC). Procurement documents will be prepared by the project management unit (PMU) and tendered. DOA will oversee, with assistance from the PIC, the installation of equipment and civil works from the contractors. This activity will closely link with Activity 2.3 – access to inputs.

2. Activity 1.2: Rehabilitating irrigation and water management infrastructure (tertiary canals, community reservoirs, and shallow tube wells) to climate-resilient condition

9. This activity involves three types of irrigation infrastructure improvement: (i) the rehabilitation of at least 130 km of tertiary canals that can irrigate approximately 6,000 hectares, (ii) the rehabilitation of 15 community-owned reservoirs used for irrigating approximately 1,000 hectares of land of the lead seed growers and their associated farmers' groups, and (iii) the installation of 8,000 shallow tube wells with some of them linked to sprinkler and drip irrigation technologies irrigating approximately 6,000 hectares.

a. **Rehabilitation of Minor Canals and Community Reservoirs**

10. The impact of the improved irrigation infrastructure and improved water use efficiency is expected to increase productivity of 20% of monsoon crops and 40% of pulses, beans, and sesame crops in winter and summer. Farmers with better access and control of water resources will grow crops with higher value. With the improved cropping intensity through more reliable irrigation, the supply of agricultural commodities will be increased, and the value chains strengthened.

11. The locations identified for tertiary irrigation and small reservoir improvements were selected based on multiple criteria. First, all three CDZ regions (Magway, Mandalay, and Sagaing) needed to be well represented with project-supported irrigation subprojects. Second, all three types of irrigation infrastructure are in demand in all regions and, necessarily, should be included in each region. Third, recipients of the improved irrigation infrastructure, especially lead seed growers associated with farmer groups, agricultural cooperatives or small-scale industries organizations, should be linked or in a position to cost-effectively link with the value chains in their respective area. Fourth, there needs to be opportunities for improving water management techniques and water use efficiencies, integrating CSA practices, growing climate-resilient crop varieties, increasing the cropping intensity, and enhancing the crop diversification. Fifth, where irrigation schemes are involved, the main and secondary canals need to be functioning without any water constraints since the project is not rehabilitating main and secondary canals. This includes locations, such as, in Shwebo (Sagaing), Chaungmagyi (Mandalay) and Natmauk (Magway) townships, where the main and secondary irrigation schemes will be renovated by international projects funded by Japan International Cooperation Agency and ADB.

12. The implementing agency for this intervention will be the Irrigation and Water Utilization Management Department (IWUMD) of MOALI which will make the final selection of schemes based on the selection criteria. Feasibility studies and detailed design consultants will be engaged by the PMU in consultation with IWUMD to undertake designs for the preparation of tender documents. Civil works contractors will be engaged by IWUMD. IWUMD staff at township and regional level (to include seconded staff) will undertake construction supervision, with support from the PIC.

13. With assistance from a feasibility study and detailed design (FSDD) contractor, IWUMD will identify schemes for rehabilitation against the following selection criteria:

- (i) New or existing (in need of renovation) minor (tertiary) canal that links the distribution canal (of a dam irrigation scheme or pumping irrigation canal) to existing or would-be on-farm ditches of a farmers group or agricultural cooperative (AC), led by a lead seed grower of the project or a farmer getting registered or certified seed from the DOA seed farm. The farmers group or AC (registered with the MOALI) is a group of farmers that are led by a lead seed grower that are practicing CSA using climate-resilient seed varieties of rice, pulses, beans, or sesame; or new or renovated old pond or small reservoir that can be or is built on the above mentioned farmland;
- (ii) The command area of the subproject should be sufficient to demonstrate climate change adaptation measures (improved technical design, enhanced water use efficiency, good agricultural practices, and improved water use governance), and to ensure that the subproject would be more climate-resilient than current;
- (iii) The subproject should not be covered by other ongoing or proposed development projects financed by ADB or development partners;

- (iv) The subproject should not cause involuntary resettlement and should require as little land acquisition as possible;
- (v) There is potential for cluster (cooperative) development and beneficiaries to include vulnerable communities, poor and women farmers;
- (vi) Should be category B or C for involuntary resettlement;
- (vii) Should yield economic internal rate of return of at least 9% or more; and
- (viii) Should enhance capacity of the beneficiaries to operate and maintain irrigation schemes sustainably with little or no external intervention other than the normal extension services.

14. In case of further need for prioritization, then the following criteria will also be added:

- (i) The subproject identified should have strong political and community ownership in terms of commitment to implement climate change adaptation measures and ensure effective operations and maintenance (O&M);
- (ii) A farmer water user group (FWUG) or farmer water user community (FWUC) already exists or there is evidence of high potential to establish a FWUG or FWUC;

15. A number of schemes have already been selected. The FSDD firm will then undertake design (assessing technical, economic, social and environmental feasibility), and assist the PMU in preparing procurement documents, if deemed feasible. The PMU will tender the works to be undertaken by a civil works contractor; IWUMD will supervise construction with the assistance of the PIC.

b. Installation of Tube wells with Sprinkler and Drip Irrigation

16. For construction of shallow tube wells, townships will need to meet the following criteria: (i) poverty incidence; (ii) complementarity with other food security and rural development interventions; (iii) potential for groundwater irrigation, (iv) geographic contiguity of townships to the extent possible, and (v) non-overlap with other similar initiatives by the government and development partners. Based on these criteria, nine townships have been selected as having potential for increased groundwater extraction: Pakkoku, Magway, Aunglan, Natmauk, Pwintbyu in Magway region; Monywa, Shwebo, Yin Mar Bin, and Sarlangyi in Sagaing region. A final list of six will be determined at project start up through groundwater surveys to be conducted. Small-scale irrigation for bean, pulses, oilseed and crop diversification (mostly vegetables) will be promoted under the project. Shallow tube wells with sprinkler and drip systems will be the preferred technology and solar pumps will be piloted on an innovation basis.

17. Once townships have been selected, selection of beneficiaries will be done by the DRD (with support from IWUMD), following community driven development (CDD) based on identification of beneficiaries in accordance with the following selection criteria:

- (i) Have access to under-utilized aquifers (with good quality groundwater);
- (ii) Own <5 acres (2ha) of unirrigated crop land;
- (iii) In the lowest income quartile of land owning households in the village (using community-based wealth ranking);
- (iv) Be engaged in oilseed, beans, pulses and oilseeds production;
- (v) Have participated in the project GAP and financial literacy training and willing to participate in ADFS);
- (vi) Must have a land title, or equivalent; and
- (vii) Beneficiaries can be individuals or groups.

18. Grants of up to 90% will be used to subsidize these investments. The beneficiaries will cover the remaining 10% tubewell installation cost plus the related operation and maintenance costs. Indicatively, the project will support the installation of 8,000 - 10,000 shallow tube wells depending on groundwater irrigation potential, subsidy rates and beneficiaries cofinancing capacity.

19. Training on the use of sprinklers, drip and solar pumps will be provided as a package with the equipment provision under output 2. This will include training on appropriate irrigation volumes to prevent over-irrigation resulting in depletion of the water table and problems of salinity.

20. As the implementing agency for this intervention (with support from the PMU and PIC), IWUMD select the final beneficiaries based on the prescribed selection criteria. Drilling and equipment will then be procured by the farmers/farmers groups themselves. Support from International Water Management Institute (IWMI) may be sought during project implementation, especially about groundwater surveys.

3. **Activity 1.3: Improving connectivity and farm mechanization through climate-resilient farm road networks**

21. This activity will upgrade 300 km of farm feeder roads into all-weather roads, principally supporting farm-access to enable farm mechanization and improve farm-to-market access in selected townships.

22. The implementing agency for this intervention will be the Department of Rural Development (DRD) of MOALI which will oversee, through regional and township offices, the feasibility and detailed design undertaken by a private contractor, with support from the PIC. Procurement documents for civil works will be prepared and tendered by PMU. DRD will then undertake construction supervision of the contractor(s), with PIC support. DRD will collaborate with the Department of Rural Road Development (DRRD) of the Ministry of Construction in this activity. Selection criteria include the following:

- (i) Should be an existing road connecting farms to the existing agricultural cooperative or other agricultural market center;
- (ii) Should complement ADB's past, ongoing and future interventions and provide the potential for higher economic growth by reducing transport costs for the movement of farm produce to agricultural markets;
- (iii) Should have a strong political and community commitment to implement adaptation measures and support a realistic and technically viable O&M plan;
- (iv) Should be consistent with DRD priorities for rural development;
- (v) Should be Category B or C for involuntary resettlement;
- (vi) Should be Category B or C for ethnic minority / indigenous people;
- (vii) Should be Category B or C for environment;
- (viii) Should yield economic internal rate of return of at least 9% or more; and
- (ix) Must have at least 40% female beneficiaries.

4. **Activity 1.4: Strengthening infrastructure for agricultural quality and safety testing at the Ministry of Agriculture, Livestock and Irrigation (MOALI) and Ministry of Commerce (MOC) laboratories**

23. This activity involves upgrading the pesticide, food safety, and commodity testing infrastructure (equipment and instrumentation) of three national government laboratories, the MOALI – Plant Protection Division (PPD) Pesticide Testing Laboratory (PTL), the MOALI - PPD

Food Safety Testing Lab (FSTLAB), and the Ministry of Commerce (MOC) – Department of Consumer Affairs (CA) Commodity Testing & Quality Management Laboratory (CTQM). These three laboratories currently charge fees, albeit minimal, for the testing. Once the increased testing capability is in place, each laboratory will need to adjust its fees to be commensurate with the value of the test run. In addition, this activity covers the provision of rapid reaction test kits to test the quality of produce being stored in private farms.

a. **Upgrading the MOALI - Plant Protection Division (PPD) Pesticide Testing Laboratory (PTL)**

24. The existing equipment at the Pesticide Testing Laboratory (PTL) has limited scope for testing for the wide-ranging content of pesticides that need to be registered. The upgraded equipment will address this deficiency.

25. The DOA Plant Protection Division (PPD) will be responsible for reviewing and approving the list of laboratory equipment to be purchased for the PTL (with assistance from the PIC). The PMU will then organise procurement.

b. **Upgrading the MOALI - PPD Food Safety Testing Laboratory (FSTLAB)**

26. The Food Safety Testing Laboratory (FSTLAB) is well facilitated with modern testing equipment for testing agricultural produce and processed products. However, the lab lacks the necessary LC-MS/MS equipment for trace analysis of pesticide residue from agricultural produce.

27. The DOA Plant Protection Division (PPD) will be responsible for reviewing and approving the list of laboratory equipment to be purchased for the FSTLAB (with assistance from the PIC). The PMU will then organize procurement.

c. **Upgrading the MOC - Consumer Affairs (CA) Commodity Testing & Quality Management Laboratory (CTQM)**

28. The laboratory equipment at the CTQM will be upgraded to be capable of efficiently and effectively test processed commodities for all types of contaminants, including mycotoxins, maximum residue limits, heavy metals, bacteria, and other contaminants.

29. Specifications have already been prepared by CTQM professional staff which will need to be reviewed by the PMU (with PIC support) before bidding documents are finalized by the PMU.

d. **Rapid Reaction Test Kits**

30. Also included in this activity is the equipping of the public, especially the MOALI/DOA/Extension, and private value chain stakeholders, farmer groups storing agricultural commodities, commodity collectors and processors, with the capability to rapidly test the quality of the commodity being stored at strategic field locations. The testing of the product quality, including testing for moisture, pH, mycotoxins, and various potential contaminants or impurities, at the post-harvest and primary processing stages, will provide the value chain stakeholders the information needed to identify food safety problems early on in the value chain, thus, ensuring a high-quality agricultural end product. The project will supply affordable rapid reaction kits that have good detection levels (20-100 ppb depending on the test). However, these tests (i) require robust sampling procedures (cleaning, grading, and sorting should be done before testing), if the results are to be representative of the lot and (ii) may include toxic reagents (except for the Aqua Afla-Test) that could accumulate in the environment unless properly disposed of or recycled.

31. The list of recipients and required equipment will be identified by the DOA and Myanmar Trade Promotion Organization (MyanTrade) of MOC based on transparent criteria (with support from the PIC), building on the specifications prepared at PPTA stage, and then sent to the PMU for procurement. DOA, and MyanTrade for processors will be responsible for disbursement and training on use, with assistance from the PIC.

B. Output 2: Climate-Smart Agriculture³³ and Agribusiness Promoted³⁴

32. This output will enhance technical and institutional capacity to integrate climate change concerns into agriculture, and help farmers and agribusinesses to enhance productivity while addressing climate change impacts. Key activities include: (i) deploying climate-resilient varieties of rice, beans, pulses and oilseeds; (ii) strengthening the capacity of seed growers, agro-dealers, and regional government staff on appropriate CSA technologies and production practices, certified seed production, farm mechanization and GAP, and of agribusinesses on business plan development, good manufacturing practices (GMP) and HACCP standards, value addition and food quality and safety improvement; and (iii) facilitating access to inputs (seeds of climate-resilient varieties, quality agrochemicals), farm mechanization services and off-farm rural livelihood opportunities, principally through establishing an agricultural digital finance service to benefit at least 35,000 smallholders.

33. A new debit card-based agricultural digital financial service, secured against a \$100 cash transfer to targeted smallholder farmers held in a compensating balance account by a bank service provider, will finance seasonal credit for GAP-based farm inputs. Targeted farmers will have access to up to \$300 annually to finance the purchase of improved seed, agrochemicals and mechanization, and technical services from registered suppliers. The project will identify smallholder beneficiaries through common interest groups utilizing community-driven development processes. The project will also help stakeholders in activities covering post-harvest crop handling to improve quality and market access, value addition and joint contract harvesting operations. The project will train farmer groups, laboratory staff, and agribusinesses in operations and maintenance (O&M) of infrastructure built under output 1.

34. As part of this output, farmers will be introduced to new technologies related to (i) mechanization equipment for land preparation, planting, harvesting, threshing and drying; (ii) small scale on-farm micro-irrigation; (iii) water conservation; and (iv) application of agricultural inputs. The project will also help stakeholders in activities covering (i) post-harvest crop handling to improve quality and market access, (ii) value addition, and (iii) joint contract harvesting operations. The project will train farmer groups, cooperatives and agribusinesses in operations and maintenance (O&M) of infrastructure.

(i) Activity 2.1: Deploying climate-resilient varieties of rice, beans, pulses and oilseeds

35. DOA will implement this activity, in cooperation with DAR. Yields of rice, beans, pulses and oilseeds grown in the target areas are adversely impacted by climate change. Under this

³³ FAO defines climate smart agriculture (CSA) as agriculture that sustainably increases productivity, enhances climate resilience (adaptation), reduces/removes greenhouse gas emissions (mitigation), and promotes achievement of national food security and development goals.

³⁴ The FAO administered technical assistance (TA) funded by the Global Agriculture and Food Security Program (GAFSP) will complement activities under this output by (i) disseminating CSA and good agricultural practices through public and private extension and ICT-based technologies, (ii) building capacity of smallholder seed growers for seed multiplication and (iii) promoting farm mechanization through information campaigns and demonstrations.

activity, the project will support the government to develop, trial, and release climate-resilient varieties.³⁵ This could include the development of a non-shattering variety of sesame.³⁶ An agreement with the International Rice Research Institute (IRRI) or similar organizations will be initiated to develop new varieties and improve land management and crop establishment, which are resource use (labor, water, energy) efficient, with reduced risk and drudgery, able to generate avenues for employment and economically attractive to youth and women. IRRI can also help in adoption of CSA practices such as alternate wetting and drying in rice-based cropping systems and seed storage in hermetic bags.

36. The varietal characteristics will include tolerance to higher temperatures, drought, as well as varieties with shorter cropping cycles. Support will be provided to MOALI to develop a commercialization program with recommendations on the legal framework to develop intellectual property rights and partial cost recovery for the institution in the long run. The project implementation consultants will provide coordination support including the preparation of the terms of the agreement with IRRI or other organizations.

(ii) **Activity 2.2: Conducting training for farmers, SMEs, and private sector on CSA**

37. **Capacity building for farmers.** The PIC will support the DOA-Extension Division (ED) in providing capacity building to farmers and seed growers on appropriate CSA and GAP – such as (i) promoting more diversified and nutrition-sensitive farming systems through appropriate and efficient use of fertilizer, pesticide and water; (ii) strengthening capacity of seed growers and farmer groups, agro-dealers, and regional government staff on CSA and GAP, certified seed production and testing; and (iii) promoting farm mechanization through information campaigns, farmer field schools (FFSs) and demonstrations. In total, 156,000 individuals are expected to have benefitted from the capacity building activities. Collaboration with other departments and/or divisions will be needed for certain activities, such as support from Department of Agricultural Cooperatives for organizational development of existing or establishing of new groups; IWUMD for water user groups; and DOA-SD, AMD, and DOA-LUD for specific technical training.

38. Capacity building will be provided through several mechanisms including: farmer field school (FFS) approach (especially targeting integrated pest management (IPM) and seed producers); lead-farmer and farmer-to-farmer extension approach; enterprise-to-farmer extension; increased use of information and communication technology; participatory on-farm trials and demonstrations implemented by lead farmers.

39. Initial activities will concentrate on the design of suitable guidelines and training methodologies as follows:

- (i) identify existing documentation of best practices or GAP for the targeted crops in the CDZ including their nutritional information. The agribusiness policy unit will be consulted which will be working on upgrading various standards (see Output 3);

³⁵ The National Agricultural and Forestry Research Institute (MOALI) is the government research agency responsible for increasing agricultural productivity, improving crop diversification and ensuring environmental sustainability and stability of rural livelihoods through agricultural research and technology utilization.

³⁶ DAR has had the introduction of non-shattering sesame seed as a priority for some time – however, no action has been taken.

- (ii) upgrade of GAP guidelines by identifying suitable resource institutions or experts to review and improve the GAP guidelines and ensuring feedback sessions with farmers during the process;
- (iii) identify trained FFS Facilitators, either from DOA or from NGOs, who could potentially be engaged as facilitators and trainers in modified FFS programs (e.g. for seed producer groups in certified/good quality seed production) and then implement FFS;
- (iv) identify possible trainers on specific agronomic topics concerning (i) GAP for production, harvest, cleaning, drying and storage, and (ii) integrated nutrient and pest management, etc;
- (v) in collaboration with target farmers, identify possible lead farmers per target village or by village tract and then design and implement a certifiable training program for the selected lead farmers with various modules such as (i) the role of lead farmers, (ii) responsibilities and their benefits, (iii) communication with fellow farmers in the village, (iv) technical modules depending on crop or other agronomic practices, and (v) facilitation of screening of extension videos. Such lead farmers (target of 375) will include private seed growers who in turn will train approximately 5,625 seed producers;
- (vi) identify if there is already a functioning mobile phone-based extension platform existing in Myanmar (e.g. DOA Call Center, AWBA smartphone application; Golden Paddy, etc.) and if so, develop upgrading options or supply content;
- (vii) hold discussions with DOA-ED and the Farmer Channel on adopting IT-based extension and knowledge dissemination technologies to introduce the approach being used for distributing GAP as well as nutritional information;
- (viii) organize an exposure visit for DOA-ED and Farmers Channel to neighboring countries to observe the IT-based technologies in action, and learn about the advantage of combining agricultural extension messages with messages on improved nutrition;
- (ix) identify potential water user groups that could be trained on irrigation management and maintenance. The IWUMD will be involved as implementing agency in this aspect. Training will be linked to those areas which have received water infrastructure support under output 1. Approximately 5,625 farmers will be trained in improved water management and water use efficiency technologies, including training up to 5,000 poor farmers accessing water for irrigation from the project-supported tube wells and rehabilitated community reservoirs. Training on the use of sprinklers, drip and solar pumps would be provided as a package with the provision of the equipment from equipment dealers (as well as IWUMD). This will include training on appropriate irrigation volumes to prevent over-irrigation resulting in rise of the water-table and problems of salinity;
- (x) establish a training program for agro-input dealers and farmers in the target areas and implement accordingly;
- (xi) facilitate soil testing and optimized fertilizer application on lead farmers fields following a participatory approach;
- (xii) develop or improve existing guidelines on fertilizer use in selected crops;
- (xiii) develop or improve existing guidelines on integrated pest management in selected crops; and

- (xiv) produce short extension videos on fertilizer and agrochemical usage and train extension agents and lead farmers on the use of those videos in farmer meetings.

40. Once packages are designed and training channels are identified, the project investment will support their roll-out. Feedback loops will ensure that training packages, guidelines and channels are continually improved.

41. **Capacity building for agribusinesses.** Supported by the PIC and PMU, the Myanmar Trade Promotion Organization (MyanTrade) of MOC will provide capacity building for climate smart agribusinesses including training on business plan development, GMP, and HACCP standards, value added processing (including use and troubleshooting of primary and value processing machinery and equipment) and quality and safety improvement. Collaboration will be needed with other departments for certain activities, such as SME Division of the Department of Consumer Affairs of the MOC. Training will be provided on standards developed under Output 3.

42. Activities will concentrate on the design of suitable guidelines and training methodologies as follows:

- (i) identify existing documentation of best practices for improving product quality along the downstream value chain (after the farm gate). This includes food safety, product quality assurance, GMP, GHP, HACCP, product branding and market promotion. This will be done in parallel with standards development activities under Output 3;
- (ii) upgrade guidelines in a participatory manner;
- (iii) identify external training providers for implementing a training of trainers (ToT) approach;
- (iv) elaborate contract farming models (with the agribusiness policy unit in MOALI; and
- (v) prepare capacity building modules.

43. Once packages are designed and training channels are identified, the project investment will support their roll-out. Feedback loops will ensure that training packages, guidelines and channels are continually improved. As a result of this activity, (i) at least 50 value-added agribusinesses of rice, pulse, beans, and sesame will be trained in food safety, product quality assurance, GMP, GHP, and HACCP; (ii) at least 10 value-added agribusinesses receive certificates of achievement in meeting the requirements of GMP and HACCP; (iii) over 5,625 farmers, 20 primary agribusinesses, and six value added agribusinesses will be integrated into the value chains to enable their products reach market-driven, exportable standards; and (iv) over 300 rice millers, 100 pulses/beans processors/exporters, and 100 sesame seed processors/exporters participated in the one-day annual workshops for promoting the export quality standards. Agribusinesses will also be supported to improve their marketing and branding in order to compete with imported products and to tap export markets.

- (iii) **Activity 2.3: Implementing agricultural digital finance service for agricultural inputs, farm mechanization services and off-farm livelihood opportunities**

a. **Seeds**

44. The DOA-SD will help facilitate an increase in the production and use of certified seeds. Considering other ongoing development activities in the sector, these activities will be coordinated in collaboration with LIFT, ISSD, Agricultural Development Support Project, and Korean Government supported activities concerning seed laboratories, and the Myanmar Fertilizer, Seed

and Pesticide Entrepreneur Association. Support will be provided by the PIC to the DOA-SD undertake the following activities:

- (i) facilitate an improved collaboration with the private sector to assess the most demanded varieties of pulses and oil seeds with good qualities in terms of climate change resilience, pest and disease resistance, nutritional qualities, good market demand;
- (ii) liaise with DAR to plan availability and production of breeder, foundation and registered seeds, and undertake field inspections;
- (iii) identify farmers in the targeted townships to be engaged in commercial seed production – such farmers can then be supported to access fertilizer and machinery through the Agriculture Digital Finance Service (ADFS) and capacity building;
- (iv) identify seed companies interested in partnering with seed producer groups through out-grower scheme arrangements (with embedded training included). Special attention should be given to the public-private partnership being launched by LIFT; and
- (v) support business plan development for each DOA seed farm so that they become financially sustainable.

b. Agrochemicals

45. The DOA-PPD and DOA-Land Use Division (LUD) will help facilitate an increase in the production and use of registered agrochemicals. Support will be provided by the PIC to the DOA-SD undertake the following activities:

- (i) identify preferred retailers and agrochemical testing arrangements with the Myanmar Fertilizer, Seed and Pesticide Entrepreneurs Association;
- (ii) establish a list of interested agro-input dealers in the targeted townships and village tracts who qualify to participate in the ADFS, training, and voluntary testing of inputs; and
- (iii) introduce and upscale the use of leaf color charts, if applicable, for some rice growing farmers in the target area.

46. Fertilizer-related activities will be implemented by DOA-LUD. Interventions will integrate with the ongoing LIFT and /IFCD project and will collaborate with representatives of the private sector through the Myanmar Fertilizer, Seed and Pesticide Entrepreneurs Association. In partnership with the Association, possible partners will be identified to implement the training programme on the importance of soil analysis and on the safe and appropriate use of quality fertilizers for agro-dealers, public and private extension agents and farmers.

47. Agrochemicals (other than fertilizers) related activities will be implemented by DOA-PPD. Interventions will engage representatives of the private sector through the Myanmar Fertilizer, Seed and Pesticide Entrepreneurs Association. In partnership with the Association, possible partners will be identified to implement the training program on pesticide risk reduction, including training on the safe and appropriate use and safe disposal of pesticides for agro-dealers, public and private extension agents and farmers. MOALI has expressed interest in engaging the Centre for Agriculture and Bioscience International (CABI) in promoting plant health management practices in CDZ.

c. **Farm Mechanization**

48. Promotion of farm mechanization will be coordinated by the Agricultural Mechanization Department (AMD) and the DOA - Extension Division (ED) in cooperation with private sector companies and cooperatives, if applicable. Support will be provided by the PIC. Means of promotion will include workshops and demonstrations on mechanization and training on machinery operation and repair. Workshops and demonstrations are intended to sensitize and inform potential clients about existing and innovative mechanization options and their related advantages and disadvantages, as well as their costs. Participants will include private dealers, service providers, mechanics, repair workshops, MOALI staff, and farmers. Special emphasis will be put on machinery suitable for smallholder farmers, machinery suitable for the pulses based farming systems, and machinery supportive of climate smart interventions (direct seeding, deep placement of fertilizer, laser levelling, water saving irrigation technologies, etc.)

49. Dissemination of information on existing mechanization options will be complemented by information on suitable financial products for machinery acquisition. Mechanization options should also be accompanied by financial analysis in order to assess the benefit of mechanization in real terms. Training on machinery operation and maintenance for dealers, service providers, mechanics, and farmers will complement the mechanization support. Training events can be implemented in collaboration with private sector suppliers or through the training institutions of AMD. For example, the AMD Meikthila Training Centre's equipment and curriculum is currently being improved and updated through the World Bank-funded Agricultural Development Support Project, and offers suitable training courses such as small repairs and maintenance of power tillers. Increased demand for farm mechanization services can be supported through ADFS for eligible project beneficiaries.

50. In terms of specific activities, the PIC will:

- (i) identify the leading suppliers of mechanization equipment with the capability of offering spare parts and after sales service;
- (ii) identify suitable and most needed mechanization options for farm and post-harvest operations with focus on pulses and oil seed crops;
- (iii) identify the most needed mechanization requirements and options for female headed households to decrease their labor burden;
- (iv) identify innovative technologies (no-tillage or minimum tillage options, IRRI hermetic bags for seed storage, etc.) to be piloted for increased adoption;
- (v) organize with private sector and DOA-ED and AMD mechanization demonstrations on lead farmers' fields;
- (vi) assess the demand for machinery operation and repair skills in the target area (probably focused on power tiller and water pump maintenance) and organize training with private sector and/or AMD Meikthila Training Centre;
- (vii) support private sector agriculture mechanization contractors with applications for machinery procurement under the Hire Purchase Financing Program supported by the LIFT; and
- (viii) work with selected AMD Agriculture Mechanization Stations to develop business plans with a view to their sustainable, profitable operation and eventual privatization.

d. **Agricultural Digital Finance Service (ADFS)**

51. Access to agricultural inputs and services will be facilitated through ADFS in collaboration with financial institutions. The scheme will target 35,000 beneficiaries (individuals, households, or

small farmer groups) with less than two hectares of land holding. The beneficiaries are required to participate in financial literacy trainings provided by the project. For each beneficiary, the project will deposit a non-withdrawable amount of \$100 in a partnering bank(s) as financial collateral. The collateral is expected to encourage bank lending to rural households at a more affordable interest rate (as compared with 30% interest rate from microfinance institutions), with an expected leverage of 2-3 times. Loan proceeds will be utilized using PIN-protected debit cards, which can be redeemed at accredited suppliers and service providers. Similar mobile phone based electronic cash transfer schemes are already in operation in Myanmar, although since mobile phone usage among the rural poor is not widespread in Myanmar, a debit card is proposed instead. The debit card will be connected to the private firms involved in seed production, agro-dealers, private providers of agricultural services and soil and food safety testing laboratories. The technologies and services to be included in the ADFS could include certified seeds, agricultural inputs, mechanization and technical services, and soil testing, as well as specific equipment and materials necessary for off-farm rural employment. E-transfers will be carefully targeted, include contribution by beneficiaries and be implemented through mechanisms that ensure financial and technical sustainability will be achieved after this initial support.³⁷

52. Eligible beneficiaries will be mostly poor, climate-vulnerable crop producers owning less than two hectares of unirrigated land, or farmer groups, who are interested to intensify their oilseed and/or pulse crop production in adherence with established GAP standards. They will be selected based on specific criteria. Identification of beneficiaries should be done through common interest group of community-driven development (CDD) processes.

53. Producers in the project area that would not qualify would have access to improved inputs on a commercial basis. Access to E-transfers for beneficiaries will be subject to attendance to capacity building and training events provided by the project on the proposed technologies (e.g., training on GAP, on use and maintenance of small-scale irrigation equipment or agricultural machinery, etc.).

54. The ADFS (Appendix 4) will be implemented by private bank(s) selected through a competitive tender process, with set up and coordination from DRD in collaboration with DOA and support from a specialized consulting firm contracted by the PMU.

C. Output 3: Enabling Environment for Climate-Friendly Agribusiness Enhanced³⁸

55. This output will promote an enabling policy and regulatory environment for agribusinesses, identify opportunities for more effective private sector engagement in value chains, and provide improved weather, market and credit information services. Key activities include: (i) establishing an agribusiness policy cell within MOALI's Department of Planning (DOP) for agribusiness policy and standards formulation (including farm-gate standards and codes of practice), research, analysis and advocacy, in collaboration with MOC; (ii) raising awareness and capacity of financial institutions to support climate-friendly agribusinesses and enhance access to financial services; and (iii) enhancing weather, market and credit information networks, and the delivery of land administration services, through building capacity of Department of Agricultural Land Management and Statistics (DALMS), regional and township administrations for land management planning, and creating demand for such services at village level.

³⁷ Financial analysis will be used to assess the sustainability of the proposed voucher packages.

³⁸ The FAO administered GAFSP TA will complement activities under this output through: (i) the implementation of an off-farm skill development and entrepreneurship program; (ii) capacity building for nutrition planning at township and village levels and the promotion of nutrition behavioral change at household level; (iii) capacity of township administration for land management planning; and (vi) capacity of MOALI on monitoring and evaluation.

56. The DOP agribusiness policy unit will conduct studies on competitiveness and profitability of key value chains and on how to penetrate and expand access to high-end markets such as Japan. The DALMS will procure and use 5-meter resolution satellite imagery and develop land use mapping, land management plans, a GIS database and crop suitability maps.

1. **Activity 3.1: Formulating climate-friendly agribusiness policies and standards, including PPPs, contract farming, GAP and organic certification, and gender aspects**

57. The project will support in setting up an agribusiness policy unit, with a Director and two research officers within the DOP of MOALI, for conducting systematic climate-friendly agribusiness policy formulation, research, analysis, and advocacy. Policies and associated standards to be advanced include, but are not limited to:

- (i) formulating an agribusiness PPP framework, and regulatory frameworks for contract farming;
- (ii) developing farm-gate product standards, that encapsulate the current empirical know-how of traders, and include the crucial parameters for the industry;
- (iii) developing a code of practice to prevent insect infestation and prevent and reduce mycotoxins in drying and storage facilities in line with the ASEAN initiative;
- (iv) developing product standards higher than CODEX³⁹ for exporters required by international buyers in developed countries. It includes work on developing an 'All-industry' Myanmar brand for pulses, based on agreed standards, for example, on the MOC 'value added' specifications, and on a subset of the CODEX requirements. Assistance may also include identification of foreign markets requirements and standards, prototyping, identification of labelling requirements, and possibly assistance to marketing and promotion (post-border access to markets). Processors and exporters will utilize the product quality standards to improve their competitiveness;
- (v) developing a system for certifying seeds;
- (vi) promoting the Shwebo Paw San rice registered as a GI rice; and
- (vii) undertaking workshops, as well as public-private forums, meeting annually for inviting private sector involvement in the development of policy and standards, and for building public awareness on newly adopted standards. To make sure that target value chain stakeholders understand the standards, training programs on standards application in the value chain activities will be conducted under Output 2.

58. The above activities will be carried out in association with MyanTrade and the Department of Consumer Affairs (CAD) in MOC, as well as other MOALI departments. The policy unit may at times simply be involved as a coordinator or facilitator. Value chain stakeholders will be invited to participate in the policy and standard formulation. The National Standards Committee will have a key role and members of its Technical Committee will be trained by the PIC in standards development. The project will develop, communicate and institute the various standards to the value chain stakeholders through workshops.

59. These reforms will create a more enabling environment for farmers and/or agribusinesses in doing business to be more cost effective and efficient at carrying out the value chain activities. The targets for the policy work include (i) establishing an agribusiness framework policy and

³⁹ Codex Alimentarius is a series of international standards for food and agricultural products. They help ensure fair trade and consumer protection internationally.

contract farming policy or regulation; (ii) implementing and enforcing regulations of the amendments to the fertilizer and pesticide policies; (iii) registering Shwebo Paw San rice as a GI rice with over 1,000 farmers producing the GI Paw San rice once it has a trademark; (iv) developing and implementing farm-gate product standards; (v) officially adopting the ASEAN code of practices for commodity drying and storage in Myanmar; and (vi) developing agribusiness public-private forum.

2. Activity 3.2: Improving skills of financial institutions on green finance, including integration of climate risk screening in lending activities

60. This activity will be implemented directly by the PIC in cooperation with the financial institution(s) managing ADFS. This activity involves support for (i) training of private banks in the potential risk and return opportunities in agribusiness and the targeted value chains of the project, (ii) and innovative financing arrangements, including green financing⁴⁰, that these financial institutions can employ to lower risk while achieving a reasonable return to both the financial institution and the agribusiness. The following targets are envisaged as a result of the training of financial institutions in climate-friendly agribusiness investments:

- (i) environmental and climate screening criteria and tools to guide the institutions' lending activities will be developed;
- (ii) capacity for evaluating loans against environmental and climate risk screening criteria will be built, so that financial institutions s can better judge if an investment is risky;
- (iii) mitigation and adaptation opportunities will be integrated into the institutions' lending activities, as a condition for agribusinesses to follow; and
- (iv) linkages, trust, and shared understanding between lenders, borrowers, and input and services providers regarding climate-friendly agribusiness investment opportunities will be strengthened.

3. Activity 3.3: Promoting multimedia-based weather, market, and credit information networks in target townships

61. DOP manages the activity with support from the PIC and DOA to facilitate the linkage of existing market price and credit information networks between local markets and traders with the target beneficiaries. Multiple relationships between market intermediaries (traders) operating in local and regional markets and farmer groups to transmit crop specific market prices on a regular basis using SMS text messaging already exists and can be expanded. The project will work with a number of information systems, e.g. Greenway and Shwe Thee Nha, and can build on DOA's call center which may also be used to provide such information to farmers and agribusinesses. The project anticipates 100% of the beneficiaries using the market information network to help

⁴⁰ "Green finance is a broad term that can refer to financial investments flowing into sustainable development projects and initiatives, environmental products, and policies that encourage the development of a more sustainable economy. Green finance includes climate finance but is not limited to it. It also refers to a wider range of „other environmental objectives, for example industrial pollution control, water sanitation, or biodiversity protection. Mitigation and adaptation finance is specifically related to climate change related activities: mitigation financial flows refer to investments in projects and programs that contribute to reducing or avoiding greenhouse gas emissions (GHGs) whereas adaptation financial flows refer to investments that contribute to reducing the vulnerability of goods and persons to the effects of climate change." (Höhne / Khosla / Fekete / Gilbert (2012)). "A key element of GF is sustainable investment and banking, where investment and lending decisions are taken on the basis of environmental screening and risk assessment to meet environmental sustainability standards." (Böhnke / Eidt / Knierim / Richert / Röber / Volz (forthcoming): How to Make Green Finance Work - Empirical Evidence from Bank and Company Surveys, German Development Institute / Deutsches Institut für Entwicklungspolitik (DIE))

negotiate markets and market prices for their crops and products. In addition, Food and Agriculture Organization of the United Nations (FAO) will complement this output by providing capacity for establishing and operating early warning systems.

4. Activity 3.4: Improving the delivery of land administration services through capacity building of regional and township administrations

a. Capacity Building of DALMS, Regional and Township Administrations for Land Management Planning

62. This land administration services feature will be implemented by the Department of Agricultural Land Management and Statistics (DALMS) in MOALI, with support from PIC and an FAO adviser. Based on guidance from DALMS, Natmauk and Shwebo townships may not be prioritized for land administration services because of ongoing support from other development partners.

63. The PIC will assist DALMS and the DOA-Land Use Division (LUD) in developing a planning tool at the national level and later be ground-truthed at the township level. Coordination will be done with the One Map Myanmar programme. Specific activities include:

- (i) procuring a Rapid Eye 5m resolution satellite imagery covering an estimated area of 24,000 km²;
- (ii) mapping present participatory land use for the selected townships;
- (iii) fitting for purpose information compilation into a GIS database. This information includes: identified Vacant, Fallow and Virgin (VFV) land; already allocated VFV land and its current use; outstanding caseload of land use certification; current coverage and programmed extension of the permanent forest estate as included in available District Forest Management plans; presence of irrigation infrastructure; settlement locations; depth and quality of groundwater; coverage by cadastral maps (kwin); land administrative classification of farmland (different categories of Le and Ya land);
- (iv) establishing regional/township crop suitability for on and off-season production for a selection of relevant crops under different inputs scenarios using the Length of Growing Period model developed by FAO and International Institute for Applied Systems Analysis (IIASA) as part of the Global Agro-Ecological Zoning approach; a pre-feasibility study will be required to identify the availability of climate and soil data; and
- (v) producing 5-6 township land management plans to:
 - Identify and program land administration interventions at township level (identification of available unused and suitable VFV land and state-owned land for possible reallocation; needs for further land use certification and tenure regularization – grazing lands, fishponds; degazetting of occupied reserved forests; establishment of community forests; etc.)
 - Select up to three village tracts for each township for project specific land administrative interventions (institutional capacity building for village development committees and Village Tract Administrative Body of Farmland, village planning, land tenure regularization, capacity building)

b. Capacity Building of Township Administrations to Deliver Land Administration and Management Services

64. The project will support capacity building of township land administrations, targeting DALMS and the General Administrative Department (GAD). There is demand from the government to reform land administration, including the design of a model office at the township level to put into place more client-friendly service delivery. Demand for services at the local level including the handling of land transfers and land use changes on titled land will increase among others through investments projects that incentivize the poor and landless to access agricultural land. Commercial farmers will also rely on services of land use change to better respond to market dynamics and mitigate climate events, the latter underpinned by an improved and longer term early warning system.

65. Support will be provided by the PIC to DALMS to implement the following activities:

- (i) capacity building to validate, strategize and implement participatory township land management plans produced at the national level;
- (ii) training in the use of modern, but cost effective and simple techniques to handle routine and new land administration tasks (land use titling, crop statistics, securing tenure over communal village lands and woodlots; reclaiming allocated but unused VFV land for reallocation to the poor) and land use planning;
- (iii) training in land administration systems, participatory land use planning, work ethics, and relationship with clients, land dispute management; work planning, report preparation, etc.;
- (iv) procuring basic equipment and possibly small infrastructural interventions with a focus on creating an easy accessible public counter for service delivery;
- (v) making available digitized maps and satellite imagery to targeted village tracts;
- (vi) updating and completing kwin map coverage; and
- (vii) supporting village tracts with exercising their land administration services and duties.

66. The interventions will be rolled out based on proof of concept for one township in each of the three regions. An alternative would be to consider a two-tiered approach using a graduation model. In first instance, a basic package of capacity building and tools would be made available for 6 townships. Townships will need to respond to a basic set of deliverables up to an agreed standard to qualify for eligibility for a second round of support.

c. Create Demand for Land Administration Services at Village Level

67. Against a background of new land legislation adopted in 2012 (Farmland Law and VFV Land Law), a massive supply-driven land titling campaign, and issuance of up to 9 million land use titles over a period of two years but in the absence of any prior awareness creation, there is a major risk that land owners will continue managing their land in the informal sphere, rather than participating in formal land administration. This may have some negative consequences for poor households in case land legislation is applied in its strictest legal spirit. Hence, the need for massive awareness raising and improved demand-driven and accessible land administration service delivery.

68. The services of locally based civil society organizations (CSOs) will be used to raise awareness.⁴¹ The CSOs should have experience and capacity to deliver community-based facilitation and animation activities for land and natural resources management. Training of CSOs will be provided by the PIC to upgrade their knowledge and skills. Service delivery enters through the Village Tract Farmland Management Body (VTFMB), and then through the village development committees (VDCs). In case VDCs do not yet exist, they will need to be created under the project. It is important to link all activities at local level to already existing initiatives and institutions, such as village development planning under LIFT. Thus, there is a need for partnership with the DRD, and GAD. It is likely that at least part of the training will need to be integrated with ongoing GAD capacity building efforts of local administrations. Activities to be undertaken by the CSOs include:

- (i) raising awareness, sensitizing and training on available land administration and management services and procedures (acquiring land use certificate [LUC], transfer, renting and leasing land, land use change, land transfers, inheritance issues, co-titling, tenure securitization of village grazing lands and woodlots, etc..) with a major theme on creating an awareness campaign on the rights and obligations of holders of a LUC;
- (ii) building capacity of village-based land management institutions to deliver services; the VTFMB is responsible for some 13 tasks including keeping updated records on land use registration. Farmland Management Bodies (FMB) at the village level witness and record all land transfers. These institutions need to be exposed to the use of good practices;
- (iii) developing participatory village land management plans to strategize and demand services. Such plans indicate needs of interventions to secure grazing lands and outstanding family farmland certification; and
- (iv) delivering services such as land certification, recording land lease contracts, recording land use changes, land dispute management, identification of VFV land for possible land allocation to the landless and poorer households, including women.

⁴¹ For example, from the Land Core Group network (LCG) that counts some 10 organizations active in the CDZ.

PROJECT PERFORMANCE MONITORING SYSTEM

1. This document presents the project performance monitoring system (PPMS) for the Myanmar: Climate-Friendly Agribusiness Value Chains Sector Project funded by the Asian Development Bank (ADB) and the Government of Myanmar. The PPMS is developed for monitoring the indicators and targets for outcome and outputs outlined in the project design and monitoring framework (DMF) and against those targets and indicators in the Gender Action Plan, social development and safeguards and those covenants as detailed in the loan agreement

A. Impact and Outcome

2. The project Impact will be: agricultural competitiveness improved (as indicated by enhanced productivity, climate resilience, quality and safety, value addition and rural household incomes). The outcome will be: productive and resource efficient agribusiness value chains in project areas developed.

B. Outputs

3. **Output 1: Critical agribusiness value chain infrastructure improved and made climate-resilient.** This Output involves infrastructure improvements to increase farm productivity and crop diversification, enhance quality of agricultural products, and increase incomes for value chain stakeholders. Key activities include (i) upgrading infrastructure (water management, farm roads, buildings, farm and post-harvest machinery and equipment, seed testing equipment, agrometeorological stations, etc.) in ten Department of Agriculture (DOA) seed farms⁴² for production of improved and/or climate-resilient seed, for sale to private producers of certified seeds and eventually benefitting 156,000 farmers; (ii) renovating at least 130 km of tertiary canals, rehabilitating 15 community ponds and reservoirs, constructing at least 8,000 shallow tube wells with some of them linked to drip and sprinkler technologies, and small-scale pumping to bring an additional 13,000 ha under irrigation benefitting at least 35,000 households; (iii) rehabilitating at least 300 km of farm feeder roads to climate-resilient condition to provide improved farm connectivity to markets and enable enhanced farm mechanization; and (iv) upgrading the safety and quality testing equipment and instrumentation in MOALI Plant Protection Division's Pesticide Testing Laboratory and Food Safety Testing Laboratory, and the Ministry of Commerce (MOC) Commodity Testing and Quality Management Laboratory to meet ISO 17025 standards, and providing food safety testing kits to DOA and the private sector. Appropriate adaptation measures will be included in the design of infrastructure to withstand impacts of climate change.

4. The project will support seed farms in promoting strong links with the private sector, marketing, and business development services. In addition, the lead seed growers and seed producer associations near seed farms will be encouraged to be integrated under a public-private partnership for seed multiplication being launched by the Livelihoods and Food Security Trust Fund (LIFT) to ensure a guaranteed market for lead seed growers. The project will also support the formation of, and train water user groups to operate and maintain tertiary canals, community reservoirs and other water management infrastructure.

5. **Output 2: Climate smart agriculture and agribusiness promoted.**⁴³ This output will enhance technical and institutional capacity to integrate climate change concerns into agriculture

⁴² Seed farms of the Department of Agricultural Research, including the Oilseed Crops Research Center in Magway, may be supported, subject to availability of funds.

⁴³ The FAO administered technical assistance (TA) funded by the Global Agriculture and Food Security Program (GAFSP) will complement activities under this output by (i) disseminating CSA and good agricultural practices

and help farmers and agribusinesses to enhance productivity while addressing climate change impacts. Key activities include: (i) deploying climate-resilient varieties of rice, beans, pulses and oilseeds; (ii) strengthening the capacity of seed growers, agro-dealers, and regional government staff on appropriate CSA technologies and production practices, certified seed production, farm mechanization and good agricultural practices, and agribusinesses on business plan development, good manufacturing practices (GMP) and Hazard Analysis Critical Control Points (HACCP) standards, value addition and food quality and safety improvement and (iii) facilitating access to inputs (seeds of climate-resilient varieties, quality agrochemicals), farm mechanization services and off-farm rural livelihood opportunities, principally through establishing an agricultural digital finance service to benefit at least 35,000 smallholders.

6. A new debit card-based agricultural digital financial service, secured against a \$100 cash transfer to targeted poor smallholder farmers held in a “compensating balance” account by a bank service provider, will finance seasonal credit for good agricultural practice-based farm inputs. Targeted farmers will have access to up to \$300 annually to finance the purchase of improved seed, agrochemicals and mechanization and technical services from registered suppliers. The project will identify smallholder beneficiaries through “common interest groups” utilizing community-driven development processes. The project will also help stakeholders in activities covering post-harvest crop handling to improve quality and market access, value addition and joint contract harvesting operations. The project will train farmer groups, laboratory staff, and agribusinesses in operations and maintenance (O&M) of infrastructure built under output 1.

7. **Output 3: Enabling environment for climate-friendly agribusiness enhanced.** This output will promote an enabling policy and regulatory environment for agribusinesses, identify opportunities for more effective private sector engagement in value chains, and provide improved weather, market and credit information services. Key activities include: (i) establishing an agribusiness policy cell within MOALI’s Department of Planning (DOP) for agribusiness policy and standards formulation (including farmgate standards and codes of practice), research, analysis and advocacy, in collaboration with MOC; (ii) raising awareness and capacity of financial institutions to support climate-friendly agribusinesses and enhance access to financial services; and (iii) enhancing weather, market and credit information networks, and the delivery of land administration services, through building capacity of Department of Agricultural Land Management and Statistics (DALMS), regional and township administrations for land management planning, and creating demand for such services at village level.

8. **Project Area.** The project will focus on strengthening agribusiness value chains in the three regions of the CDZ, namely, Sagaing, Mandalay, and Magway regions.

9. **Project Costing.** The project cost is estimated at \$64.92 million, \$40.5 million from the ADB, \$22.0 million from the Global Agriculture and Food Security Program, \$0.99 million contributed by project beneficiaries and \$1.43 million from the Government of Myanmar.

10. **Project Implementation Arrangements.** The national level coordination will be provided by a Project Steering Committee (PSC) which will be chaired by the Minister of MOALI and comprising representatives (at the level of Director General or above) of the MOPF, MOC, MOI, and MONREC will provide oversight, coordination, and policy guidance in all aspects of Project implementation. Other ministries may be invited to attend as observers when specific issues are being discussed. In order that decisions are made quickly, it is recommended that the various Steering Committee members will be at least the rank of Director General. The Steering

through public and private extension and ICT-based technologies, (ii) building capacity of smallholder seed growers for seed multiplication and (iii) promoting farm mechanization through information campaigns and demonstrations.

Committee may invite persons and agencies to discuss specific agenda items, when required. For more effective decision making, the persons attending should not exceed 20 people.

11. A Project Management Unit (PMU), headed by the Project Director, will be supported by the Project Manager, Finance Officer, Procurement Officer, M&E Officer, Safeguards Officer and Administrative Officer and each implementing agency will have Project Coordinators. DOA, DRD and IWUMD will assign Finance Officers and Procurement Officers to manage the financial and procurement activities of the project. There will be regional representatives in each of the three Regional Government Offices in Sagaing, Mandalay, and Magway to coordinate subproject activities with the PMU and with project-supported value chain stakeholders, assist the PMU M&E and Safeguard Officers in monitoring and safeguards work, respectively, in subproject activities, assist in organizing the venues for project training, meetings, etc., keep the regional, district, and township officials aware of the project's progress, and regularly report on subproject developments, issues, and concerns.

12. The Project Implementation Consultants (PIC), other contracted technical specialists and government professional staff serving the project as resource persons will be responsible for a wide-ranging set of technical assistance, capacity building, and training. The technical areas that will be covered by PIC include agribusiness policy, irrigation, post-harvest handling and storage, contract farming, Farmer Field School operations, seed production and certification, food safety and standards development, agro-processing, brand development and marketing, crop insurance, and green/agribusiness financing. Along with the technical areas, social development and gender, social safeguards, and environment and climate change aspects of the project will be led by PIC consultants with the assistance of the PMU Safeguards Officer. An International Financial Management Expert and an International Procurement Expert will train the PMU counterparts at the start of the project in the systems development, work planning, operating procedures, and coordination. An Administrative Assistant will serve within the PMU to address all administrative activities of the overall PMU. A cell within the Policy Unit (currently in the formation stage) of the DOP of the MOALI will be created by the project for carrying out climate smart agribusiness policy work, including policy formulation, research, analysis, and advocacy activities that serve to enhance the enabling environment for the stakeholders to operate more efficiently and cost effectively in the targeted commodity value chains. The cell will be staffed by a PIC National Agribusiness Policy Unit Director and two National Research Officers, on carrying out policy work in agribusiness policy and the other in Climate Smart Agricultural policy.

Implementation Progress Startup Activities Table

Activity	Deadline	Status
Open advance account & subaccounts		
PIC recruitment		

C. Key Activities and Milestones

1. Critical agribusiness value chain infrastructure improved and made climate-resilient

- 1.1 Upgrade infrastructure in ten DOA seed farms for production of improved and climate-resilient seed (Q3 2019–Q4 2023).
- 1.2 Rehabilitate irrigation and water management infrastructure (tertiary canals, community reservoirs, and shallow tube wells) to climate-resilient condition (Q2 2019–Q2 2025).
- 1.3 Improve connectivity and farm mechanization through climate-resilient farm road networks (Q1 2020–Q3 2022).
- 1.4 Strengthen infrastructure for agricultural quality and safety testing (Q3 2019–Q4 2022).

Output 2: Climate-smart agriculture and agribusiness promoted

- 2.1 Deploy climate-resilient varieties (Q3 2019–Q2 2025) [G/CD].
- 2.2 Conduct training for farmers, SMEs and private sector on CSA (Q3 2019–Q1 2025) [G/CD, GE].
- 2.3 Implement agricultural digital finance service for agricultural inputs, farm mechanization services and off-farm livelihood opportunities (Q1 2020–Q4 2024).

Output 3: Enabling environment for climate-friendly agribusiness enhanced

- 3.1 Formulate climate-friendly agribusiness policies and standards, including public-private partnerships, contract farming, GAP and organic certification, and gender aspects (Q2 2019–Q4 2023) [G/CD].
- 3.2 Improve skills of financial institutions on green finance, including integration of climate risk screening in lending activities (Q2 2020–Q4 2024) [G/CD, GE].
- 3.3 Promote multimedia-based weather, market and credit information networks in target townships (Q1 2020–Q4 2023) [G/CD, GE].
- 3.4 Improve the delivery of land administration services through capacity building of regional and township administrations (Q1 2020–Q2 2025) [G/CD,GE].

Project Management Activities

- Mobilize project implementation consultants and procure equipment, furniture and vehicles (Q1-Q2 2019).
- Establish PPMS, and conduct needs assessment for specific project management skills (Q1-Q2 2019).
- Customize learning modules to fit participant needs (Q3 2019) [G/CD, GE].
- Deliver and evaluate training courses for 200 staff (35% female) from various levels (national, provincial and district) in project management, procurement, financial management, gender, social and environmental safeguards (Q2 2020–Q4 2024) [G/CD, GE].

1. Safeguards

Subproject/Contract	Social safeguard assessment	Social Safeguard screening	Resettlement Plan		Environment assessment	
			Completed	Ongoing	Completed	Ongoing
Subproject 1 - name	completed	Yes	Yes, no or NA		Yes or no	
Subproject 2 - name	completed	yes				
Subproject 3	Under review	In progress				
Subproject 4						

2. Procurement

A brief write up and review of the procurement plan.

Procurement of Goods and Equipment

Package	Estimated Amount (\$)	Award Date	Contract Amount (\$)
Package 1	Insert amount	Insert date	Insert amount
Package 2			
Package 3			

Works contract progress

Subproject/contract	Scheduled Completion	Time elapsed	Physical progress (%)
Contract one	Insert date	Months	Percent
Contract 2			
Contract 3			

Disbursements

Loan Category	Allocation (\$)	Amount disbursed	Percentage	Target
ADB	61 million	Insert amount		
MYA	7 million			

Financial Progress

Item	Amount allocated (\$)	Amount committed (\$)	Paid (\$)
Goods			
Contract 1			
Contract 2			
Consulting Services			
Contract 1			
Contract 2			
Works			
Contract 1			
Contract 2			

D. Project Performance

The project's performance against the targets set out in the DMF for outcome, outputs and inputs is reported in the table below:

DMF Targets Vs Achievements

Results Chain	Performance Indicators with Targets and Baselines	Achievements
Outputs 1. Critical agribusiness value chain infrastructure improved and made climate-resilient	By 2025: 1a. 10 DOA seed farms produced at least 3,000 tons of HYV rice seed, 130 tons of chickpea, 180 tons of green gram, and 70 tons of sesame annually (2017 baseline: 378 tons HYV rice, 25 tons of chickpea, 36 tons of green gram, and 20 tons of sesame) to benefit at least 156,000 persons (80,000 female members) in 35,000 households (2017 baseline: 0) 1b. About 13,000 ha of additional area brought under climate smart water management through rehabilitating 130 km of tertiary canals (6000 ha), 15 community reservoirs (1000 ha) and installing 8,000 shallow tube wells (6000 ha) to benefit at least 156,000 persons (80,000 female members) in 35,000 households (2017 baseline: 0) 1c. At least 300 km of farm roads rehabilitated to climate-resilient condition (2017 baseline: 0) 1d. Crop product quality and safety testing infrastructure in pesticide testing laboratory, FSTLAB and CTQM upgraded leading to ISO 17025 certification to test at least 2500 samples per year (2017 baseline: 1100)	
2. Climate-smart agriculture and agribusiness promoted	2a. At least four (1 rice, 1 chickpea, and 2 sesame) climate-resilient varieties released (2017 baseline: 0) 2b. Skills and knowledge of at least 300 lead seed growers in certified seed production, and 50,000 farmers (40% women) in CSA, GAP and agribusiness improved (2017 baseline: 0) 2c. At least 35,000 farmers (40% women) adopted GAP standards for bean, pulse and oilseed production (2017 baseline = 0) 2d. At least 50,000 farmers (30% women) adopt water use efficient technologies and develop capacity to operate and maintain small scale irrigation schemes (2017 baseline: 0) 2e. At least 50 agribusiness dealers and service providers, and 500 farmers (30% women) trained in farm machinery operation and maintenance	

Results Chain	Performance Indicators with Targets and Baselines	Achievements
	2f. At least 35,000 households (156,000 persons, 80,000 females) benefitted from agricultural digital finance to access improved agricultural inputs, farm mechanization services and off-farm livelihood options (2017 baseline: 0)	
3. Enabling environment for climate-friendly agribusiness enhanced	<p>3a. Agribusiness policy unit established in DOP</p> <p>3b. At least three climate-friendly and gender-responsive agribusiness policies, ** including a PPP framework focusing on agribusinesses formulated (2017 baseline: 0)</p> <p>3c. At least 100 rice millers, and 50 pulses/beans /sesame processors and exporters, including 30% women-led and/or owned***, adopted GMP and HACCP standards (2017 baseline: 0)</p> <p>3d. Skills and knowledge of at least 50 staff, including 30% women, from financial institutions in green finance improved (2017 baseline: 0)</p> <p>3e. Weather, market and credit information systems at DOP upgraded to provide timely information to at least 50,000 community-level supply chain stakeholders, including 25,000 women (2017 baseline: Not available)</p> <p>3f. Skills and knowledge of at least 50 staff, including 30% women, improved in land administration systems and services**** (2017 baseline: 0)</p>	

3. Gender Action Plan

The project's progress against the Gender Action Plan is presented in the table below.

Gender Action Plan Targets Vs Achievements

Date of update:

Project Title:

Country:

Project No.:

Type of Project (Loan/Grant):

Approval and Timeline:

Gender Category:

Mission Leader:

Project Impact:

Project Outcome:

Gender Action Plan (GAP Activities, Indicators and Targets, Timeframe and Responsibility)	Progress to date (as of _____) (This should include information on period of actual implementation, sex-disaggregated quantitative updated (e.g. number of participating women, women beneficiaries of services, etc.), and qualitative information. However, some would be on-going - so explain what has happened so far towards meeting the target.	Issues and Challenges (Please include reasons why an activity was not fully implemented, or if targets fall short, or reasons for delay, etc., and provide recommendations on ways to address issues and challenges)
Output 1: Critical agribusiness value chain infrastructure improved and made climate-resilient		
1. Ensure critical agribusiness VC infrastructure is responsive to the needs of women and men		
2.		
Output 2: Climate smart agriculture and agribusiness promoted		
1.		
2.		
Output 3: Enabling environment for climate-friendly agribusiness enhanced		
1.		
2.		

Comments/ Remarks:

Accomplished by : _____

Date Accomplished: _____

13. **Data Management:** The process of data management consists of data collection, data communication, analysis and reporting. Data will be collected on all the indicators defined in the DMF by the PIC, the PMU, and the Implementing Agencies. The data collected will be reported to the M&E officer of the PMU who will be supported by the PMU Project Director and the relevant PIC team members, particularly those working in management, procurement, and subproject implementation. The social development, gender inclusion, social safeguards, and environmental management and climate change adaptation aspects of the subprojects will be monitored by the PIC Experts and Specialists in close collaboration with the Regional Representatives of the PMU, and the IAs. The Regional Representatives (MOALI and MOC) will play an important role in the collection of data during the subproject implementation process and capacity building activities

14. The PIC and the PMU will compile the information on each of the subprojects and the PMU will aggregate and analyze the ensuring the necessary details and data are relevant to verify performance and to evaluate the outputs. The PMU will subsequently update the PPMS with support of PIC.

15. Data on indicators related to minor canals, farm feeder roads, and storage facilities will be monitored by the PMU's Regional Representatives as well as the DOA of MOALI. All concerned ministries will monitor gender, social safeguards and development and the capacity building activities linked to the subprojects.

16. **Status of Compliance with Loan Covenants:** There are a number of loan covenants, out of which the PPMS will indicate and report the number where compliance has been achieved, partly complied and are ongoing and are still not met or are not yet due. The list of covenants under relevant categories and their status of compliance as of a certain date is provided in the table below.

Status of Compliance with Loan Covenants

No:	Covenant	Loan Agreement Reference	Compliance status	Remarks
	Financial			
1				
2				
	Safeguards			
1				
2				
	Social Development			
1				
2				
	Economic			
1				
2				
	Others			
1				

17. **Problems and Issues during Implementation.** The final section of the PPMS report will describe any problems caused by delayed project implementation over the last 6 months. The list of actions taken and the status of proposed actions are recorded.

18. **Reporting.** The PPMS will be updated every 6 months from the start to end of the project. It will be sent to ADB by 30 January and 30 July every year.

ANNEX 2.1: SAMPLE Progress Report Outline

A. Introduction and Basic Data

Provide the following: ADB loan number, project title, borrower, executing agency(ies), implementing agency(ies);

- total estimated project cost and financing plan;
- status of project financing including availability of counterpart funds and cofinancing;
- dates of approval, signing, and effectiveness of ADB loan;
- original and revised (if applicable) ADB loan closing date and elapsed loan period based on original and revised (if applicable) loan closing dates; and
- date of last ADB review mission.

B. Utilization of Funds (ADB Loan, Cofinancing, and Counterpart Funds)

Provide the following:

- cumulative contract awards financed by the ADB loan, cofinancing, and counterpart funds (commitment of funds to date), and comparison with time-bound projections (targets);
- cumulative disbursements from the ADB loan, cofinancing, and counterpart funds (expenditure to date), and comparison with time-bound projections (targets); and
- re-estimated costs to completion, need for reallocation within ADB loan categories, and whether an overall project cost overrun is likely.

C. Project Purpose

Provide the following:

- status of project scope/implementation arrangements compared with those in the report and recommendation of the President (RRP), and whether major changes have occurred or will need to be made;
- an assessment of the likelihood that the immediate development objectives (project purpose) will be met in part or in full, and whether remedial measures are required based on the current project scope and implementation arrangements;
- an assessment of changes to the key assumptions and risks that affect attainment of the development objectives; and
- other project developments, including monitoring and reporting on environmental and social requirements that might adversely affect the project's viability or accomplishment of immediate objectives.














D. Implementation Progress

Provide the following:

- assessment of project implementation arrangements such as establishment, staffing, and funding of the PMO or PIU;
- information relating to other aspects of the EA's internal operations that may impact on the implementation arrangements or project progress;
- progress or achievements in implementation since the last progress report;
- assessment of the progress of each project component, such as,
- recruitment of consultants and their performance;
- procurement of goods and works (from preparation of detailed designs and bidding documents to contract awards); and

- the performance of suppliers, manufacturers, and contractors for goods and works contracts;
- assessment of progress in implementing the overall project to date in comparison with the original implementation schedule—quantifiable and monitorable target, (include simple charts such as bar or milestone to illustrate progress, a chart showing actual versus planned expenditure, S-curve graph showing the relationship between physical and financial performance, and actual progress in comparison with the original schedules and budgets; and
- an assessment of the validity of key assumptions and risks in achieving the quantifiable implementation targets.

Sample Implementation Schedule

Activities	Year 1	Year 2	Year 3	Year 4	(a) Assigned Weight	(b) Actual Progress	(a) x (b) Weighted Progress
Establish PIU					5%	100%	6%
Establish Accreditation Board, etc.					5%	0%	0%
Appoint Staff and Budget					4%	75%	3%
Adopt Architecture Plans					2%	100%	2%
Shortlist Consulting Firms					6%	100%	6%
Prepare Fellowship Program					6%	76%	4%
Prepare Civil Works Tendering					30%	0%	0%
Civil Works: Classrooms, Dorms, etc.					6%	0%	0%
Procurement of Furniture and Equipment					16%	10%	2%
Field Work of Consultants					7%	0%	0%
Provide Fellowships					6%	0%	0%
Conduct Study Tours					6%	0%	0%
Provide Curriculum Standards					6%	0%	0%
				Total Weight Imp. Progress	100%		24%

(a) Assigned weight for each activity

(b) Actual progress of each activity

(a) x (b) weighted progress for each activity

Project progress = sum of all weighted progress for each activity

E. Compliance with Covenants

Provide the following:

- the borrower's compliance with policy loan covenants such as sector reform initiatives and EA reforms, and the reasons for any noncompliance or delay in compliance;
- the borrower's and EA's compliance with financial loan covenants including the EA's financial management, and the provision of audited project accounts or audited agency financial statements; and
- the borrower's and EA's compliance with project-specific loan covenants associated with implementation, environment, and social dimensions.

F. Major Project Issues and Problems

Summarize the major problems and issues affecting or likely to affect implementation progress, compliance with covenants, and achievement of immediate development objectives.

Recommend actions to overcome these problems and issues (e.g., changes in scope, changes in implementation arrangements, and reallocation of loan proceeds).

GENDER ACTION PLAN (GAP) MONITORING TABLE**Date of update:****Project Title:****Country:****Project No.:****Type of Project (Loan/Grant/TA):****Approval and Timeline:****Gender Category:****Mission Leader:****Project Impact:****Project Outcome:**

Gender Action Plan (GAP Activities, Indicators and Targets, Timeframe and Responsibility)	Progress to date (as of _____) (This should include information on period of actual implementation, sex-disaggregated quantitative updated (e.g. number of participating women, women beneficiaries of services, etc.), and qualitative information. However, some would be on-going - so explain what has happened so far towards meeting the target.	Issues and Challenges (Please include reasons why an activity was not fully implemented, or if targets fall short, or reasons for delay, etc., and provide recommendations on ways to address issues and challenges)
Output 1: Critical agribusiness value chain infrastructure improved and made climate-resilient		
1. Ensure critical agribusiness VC infrastructure is responsive to the needs of women and men		
2.		
Output 2: Climate smart agriculture and agribusiness promoted		
1.		
2.		
Output 3: Enabling environment for climate-friendly agribusiness enhanced		
1.		
2.		

Comments/ Remarks:**Accomplished by :** _____**Date Accomplished:** _____

AGRICULTURAL DIGITAL FINANCE SERVICE (ADFS)

1. The Climate-Friendly Agribusiness Value Chains (CFAVC) Sector Project, to be implemented in Magway, Mandalay and Sagaing regions of Myanmar's central dry zone (CDZ), will improve rice, bean, pulse and oilseed production, processing and marketing in the project area, with a focus on irrigated smallholder production systems. At the smallholder level, this will be achieved through, *inter alia*, improved male and female smallholder producer access to irrigation, quality crop inputs, mechanization and technical advisory services, increased land use right security, the development of good agricultural practices and improved access to financial services.

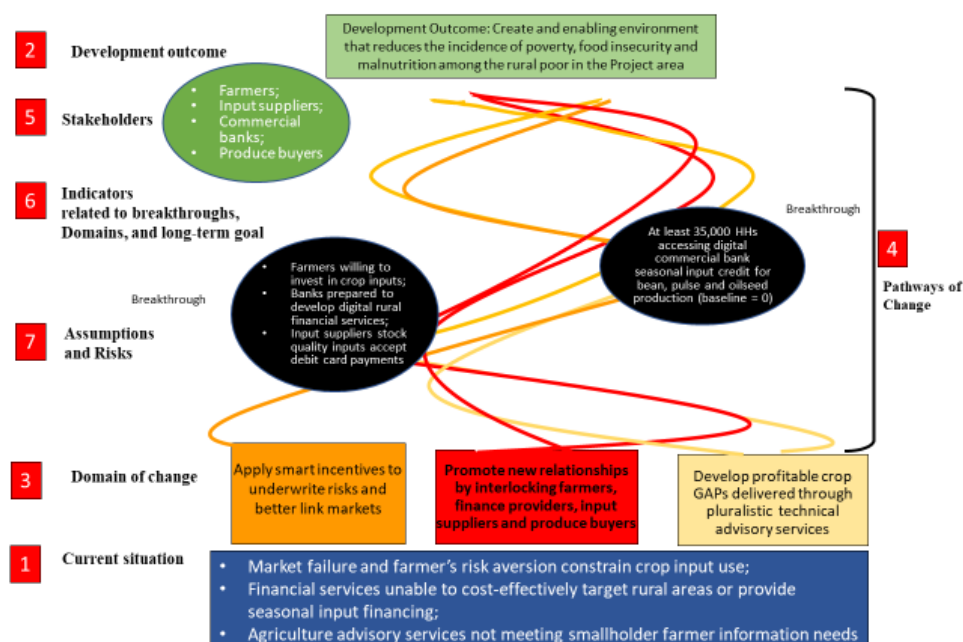
2. Male and female smallholder farmers in Myanmar currently have limited access to financial services. The Myanmar Agricultural Development Bank (MADB) principally finances paddy production — MMK 150,000 per acre (up to 10 acres) — and, only to a very limited extent, bean, pulse and oilseed production. MADB provides MMK 50,000 per acre for other crops (up to 10 acres) (on paper). MADB disbursed \$1.13 billion during the 2016 monsoon season, but just \$153 million in the winter (post-monsoon/dry season) when beans, pulses and oilseeds are primarily produced. This gap in access to financial services remains one of Myanmar's most pressing development challenges. Improving access to finance for unserved and underserved market segments is critical to expanding rural households economic opportunities and reducing chronic undernutrition, while generating positive gender, social and economic benefits.

3. A targeted, CFAVC project Agricultural Digital Finance Service (ADFS) that will provide male and female smallholder producers with access to seasonal credit to purchase quality inputs for bean, pulse and oilseed production in the CDZ is proposed because: (i) there are known crop technologies and management systems that generate sustainable and profitable productivity gains in the project area, but currently have low adoption among smallholder farmers; (ii) there is sufficient complementary infrastructure and institutions to support financial, technical and mechanization services and market activities for these commodities; (iii) the input distribution network is dense enough to support increased quality crop input use; and (iv) the proposed intervention can be targeted to poor landowners. Seasonal credit for crop inputs and linked supporting services will be directed at producers who otherwise would not use inputs (for example, due to affordability or risk aversion constraints), but who will make productive use of any supporting interventions they can obtain.

4. The objective of ADFS is to: (i) accelerate adoption of climate-smart technology for bean, pulse and oilseed production for 35,000 male and female smallholder producers; and (ii) catalyze commercial banks to provide sustainable short- and medium-term financial services for working capital and irrigation technology. The ADFS intervention, which will have credible time-bound exit options, will be part of a comprehensive climate-smart program to improve bean, pulse and oilseed productivity in the CDZ. It will: (i) help underwrite risks of early adoption of new technologies (new varieties, certified seed, mechanization, good agriculture practice (GAP) standards) to help achieve economies of scale; (ii) “thicken” associated value chains and input supply markets; (iii) raise land and labor productivity with overall increases in on-farm labor demand; (iv) pilot a mechanism for sustainable and scalable financial service delivery to smallholder producers; and (v) promote new relationships among input providers and smallholder producers through interlocking arrangements linking input sellers, seasonal finance providers, and produce buyers. This approach is consistent with the LIFT strategy for rural households with land, labor and/or commercial potential to step up the value ladder and out of poverty through increases in labor and land productivity, as well as through enhanced capacity to market production.

5. The theory of change is that incentivized access to seasonal credit for crop inputs will increase smallholder farm profitability and reduce the perceived risk for producers with a limited knowledge of GAP and other labor and land productivity efficiency opportunities. The hypothesis is that access to financial services through a low cost, low risk credit delivery mechanism, when combined with improved access to quality crop inputs and sound technical advice, would lead to rapid, sustainable improvement in land and labor productivity, meeting bean/pulse/oilseed market demands and, overall, contribute to national agricultural growth. This would be operationalized by: (i) community-based identification of poor households with available land, labor and irrigation water access; (ii) the development of GAP standards for the targeted oilseed and pulse crops; (iii) the up skilling of public and private extension service providers, including farmer-to-farmer and enterprise-to-farmer advice; and (iv) the development of a 'compensating balance' secured line of credit delivered through a debit card-based financial service.

Figure A4.1: Theory of Change: Smart subsidies expand oilseed and pulse crop production



A. Digital Retail Finance Package⁴⁴

6. The project will establish a digital retail finance program that will enable targeted male and female smallholder producers to access discounted credit⁴⁵ to purchase seeds, fertilizers, herbicides and pesticides, machinery services, and GAP-based information services in support of increased bean pulse and oilseed production. Under separate funding, targeted smallholder

⁴⁴ The description of the digital finance program draws on: (i) MercyCorps E-Transfer Implementation Guide, Master Card Centre for Inclusive Growth (<https://www.mercycorps.org/sites/default/files/E-TransferGuideAllAnnexes.pdf>).

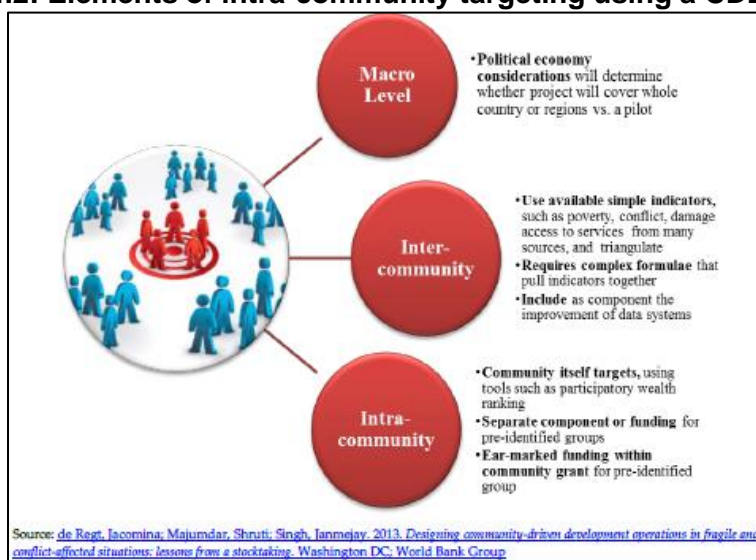
⁴⁵ The digital finance package would enable smallholder farmers to access private bank finance, for which the Central Bank of Myanmar (CBM) has set a fixed interest rate of 13 per cent per annum. This represents a significant discount in an environment where inflation is averaging around 7% per annum and the "market interest rate" is 19 per cent (TCX estimate), or the 30 percent per annum MFI interest rate, or informal finance of 48 percent and higher.

producers will also receive GAFSP financial support for the establishment of bore water-based irrigation systems on their dryland farms. The digital retail finance program will be designed to:

- (i) secure sustainable smallholder access to private bank seasonal input finance through the interlinkage of private banks, agro-dealers and smallholder producers;
- (ii) provide farmers with freedom to select inputs of their choice, thereby promoting agricultural diversification (subject to GAP recommendations and a negative list of agrochemicals); and
- (iii) crowd in more private sector in agro-input distribution, thereby promoting competitiveness and transparency in the supply and distribution of inputs.

7. The project will adopt a proven community-driven development (CDD) approach to facilitate community identification of poor, climate-vulnerable male and female crop producers owning less than 3 acres of unirrigated land who are interested to intensify their oilseed and/or bean/pulse crop production in adherence with project-established GAP standards. Effective social mobilization will be carried out to make sure that all members of the community understand what the ADFS entails, its purpose and activities, and who will be targeted as beneficiaries or otherwise directly involved, and why. This process will ensure that particular groups of people including women, people of lower societal perception, the disabled, the extreme poor, the less educated, and minority ethnic groups are empowered and included in a clear and transparent beneficiary selection processes. This process would be built around and awareness of sensitivities regarding community level politics and culture, with a strong understanding of existing power structures, economic relationships, social hierarchies, and entrenched practices (see Figure A4.2 for further details on community-based targeting). Selected male and female beneficiaries will be in the lowest income quartile of land owning households in their villages. The land belonging to targeted producers will need to be in aquifers suitable for borehole irrigation. Targeted producers, either individually or in groups, will be provided with a grant to install one acre each of dry season drip or sprinkler irrigation on their land. The successful installation of the irrigation system will trigger the issuance of a mobile phone-based digital finance account for the beneficiary.

Figure A4.2: Elements of intra-community targeting using a CDD approach



8. The digital retail finance package will enable beneficiaries to secure seasonal credit for the purchase of GAP-identified seeds and agrochemicals, and mechanization and technical

advisory services from certified suppliers. Input supplier eligibility will be based on: (i) registration in the districts in which producers are located and quality of inputs conforming to national standards, which will be ascertained through: (a) physical checks of the agricultural inputs held by the agro-dealers at the beginning of the program; and (b) additional physical checks of the agricultural inputs held by agro-dealers during the program; (ii) ability to ensure adequate stock of listed agricultural inputs; (iii) ability to provide invoices to farmers participating in the voucher program, as evidence of sale and for record keeping; (iv) willingness and availability to be trained; (v) experience participating in similar programs; and (vi) trading history in agricultural inputs. Mechanical service providers (land preparation, spraying, weeding, harvesting, etc.) will be evaluated for the quality and suitability of their machinery and will be required to participate in a project-sponsored training program delivered by the National Farm Mechanization Training Centre in Meiktila (Mandalay region). Technical advice service providers will need to be registered through MOALI.

B. Agricultural Digital Finance Service

9. The CFAVC project will, through a competitive tender, invite financial service providers (FSPs) to research and develop a new digital retail financial service customized for meeting the working capital requirements of smallholder bean/pulse/oilseed producers — providing, at the start, digital credit of up to MMK 136,500 (\$100 dollars) per acre for up to three acres per client. The new financial service will be secured against a \$100 conditional cash transfer by the project from the GAFSP fund to each participating smallholder farmer, that will be deposited into a “compensating balance” in the smallholder’s name, for a fixed term of five years.⁴⁶

10. The project will, subject to beneficiary technical and financial and digital literacy training, provide a conditional cash transfer of \$100 to targeted male and female smallholder producers. The cash transfer will be deposited in a commercial bank compensating balance account established for each participating smallholder producer. Collateral is provided through the compensating balance, being a minimum balance maintained in a client’s deposit account, and used to offset the cost (risk and transactional) incurred to set up the agricultural loan. Smallholder producers can then leverage the compensating balance to borrow \$100 per acre for up to three acres, secured against the compensating balance.

11. In addition to the business of incremental, secured lending to smallholder farmers, the commercial bank gets the added benefit of a five-year, non-interest-bearing deposit with an estimated worth of \$0.9 million (return of 4.5 percent compounded over five years). Financial collateral and earnings from the non-interest-bearing deposit is estimated to be nearly 65 percent against the total loans disbursed of \$10.5 million.

12. The ADFS will leverage private sector capital to create sustainable-lending financial services for male and female smallholder producers through the development and rollout of digital retail loans with lower transaction costs than traditional lending mechanisms. In addition, the market of new financial services initiated by this support will lead to scalable market development through injection of private capital. Given the rapidly changing environment in Myanmar, and, in particular, the growth in mobile phone penetration and customer-facing cash agent channels (e.g. WAVE Money) the project is proposing a change in the delivery channel from a bank’s branch network, to a digital financial services channel. An advantage of using a digital channel for the commercial bank is lowered transaction costs after the initial account registration. The commercial

⁴⁶ The use of compensating balances is a well-established microfinance practice — mandatory savings for access to credit.

bank does not need to meet the participating male and female to evaluate or to service each loan as an agent (e.g. an input supplier) performs both the disbursement of the loan and collection of repayments. Furthermore, compensating balances that are non-interest bearing compensate the commercial bank for the costs incurred in servicing low-income clients. The compensating balance account will reduce maintenance costs per deposit and loan account from where they are now - more than \$6 per year.

13. To achieve a rapid start up of the program, the payment system for the smallholder loans will initially be through a debit card that can only be used with project/bank certified suppliers, including farm mechanization and technical service providers and fertilizer/seed/chemical input suppliers. This allows the project to monitor and evaluate at the lowest transactional costs how loan funds are being invested. In the medium term, the project will explore the delivery of these services through a personal digital wallet, accessible through a cell phone.⁴⁷

14. The effective subsidy under the program (in addition to the \$100 conditional compensating balance grant) is derived from smallholder farmers access to the commercial bank lending interest rate, the subsidy's value being the difference between the Central Bank of Myanmar's (CBM) maximum commercial bank loan interest rate of 13% annually, against the market interest rate of 19% per annum (TCX estimate), the 30 percent per annum MFI rate, or informal finance at 48% per annum and higher. The grant element (compensating balance) in this agricultural finance program is an effective way of rationalizing and targeting financial service access to maximize production, lower transaction costs, limit political patronage and build a credit history.

15. Majority of male, and especially female smallholder producers that will be targeted lack a formal financial history. The use of collected digital data is key to informing commercial bank decision-making. Analytics from the data collected under this program will be used to underwrite risk (credit score), and, in the long term, lower transaction costs to make agricultural retail lending mainstream and financially feasible.

16. The MOALI Department of Rural Development (DRD) will be responsible for coordinating the ADFS. DRD will be responsible for: (i) coordinating the community identification of beneficiaries; (ii) recording their personal and economic details (name of household head, ID number, household size, number of economically active persons, land size, cropping pattern, livestock ownership, etc.), verifying that information and maintaining a register of beneficiaries; (iii) training and raising awareness of the program among beneficiaries; (iv) distributing information, education and communication materials (posters and pamphlets) on how to use the ADFS; (v) facilitating beneficiary access to public and private GAP-qualified technical advisers; (vi) reporting on the overall process; and (vii) coordinating independent baseline, post-planting and post-harvest surveys.

17. DRD will either directly manage, or supervise the contracted delivery of an ADFS monitoring and evaluation program that will monitor that: (i) the designated beneficiary has the

⁴⁷ Telecommunications and mobile phone penetration have grown rapidly in Myanmar in a short time, with mobile phones and call rates becoming affordable in 2012. Following this development, digital payment systems such as WAVE Money was launched in 2014. Data collected in July 2017 in a nationwide survey of the general population reveals that men and women report access to a mobile phone in their households in equal numbers, and that mobile phone penetration is high (88.5 per cent of rural households).⁴⁷ Data on phone usage is mixed. WAVE Money's data indicates that men are more likely to use phones for social media than women. In general, although smartphone ownership is high, usage tends to be for only a few apps. Importantly, although women increasingly have access to smartphones, their digital and financial literacy is not always on par with the requirements for accessing and utilizing these digital payment systems.

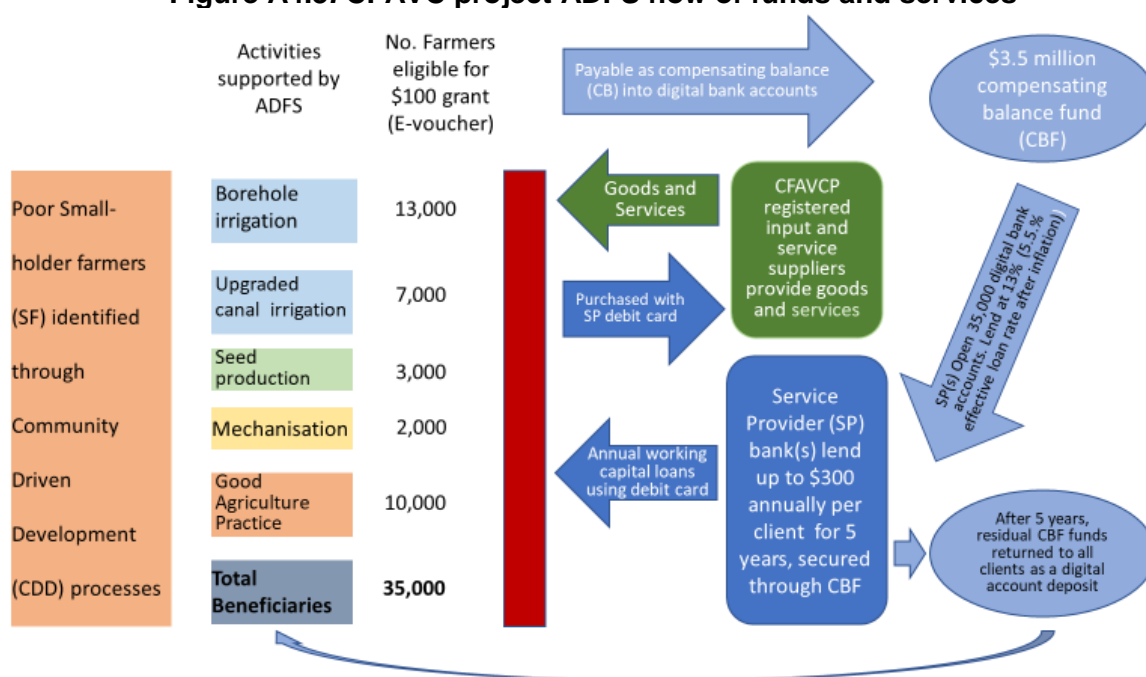
debit card and nobody else (checks through national ID cards and the PIN); (ii) prices of inputs from certified suppliers are in line with the general market; (iii) supplies of inputs and services are sufficient to meet the demand; (iv) types of commodities and services purchased under the E-voucher program are registered; and (v) beneficiaries are receiving the full value of their E-vouchers and are not discounting them for cash with the dealers. Communities will be empowered to participate in monitoring the program through a participatory monitoring and evaluation system. All monitored information will be gender disaggregated.

18. Eligible ADFS Financial Service Providers (FSPs) will: (i) be registered in Myanmar to provide financial services; (ii) have previous experience with electronic debit cards; (iii) have the ability to maintain multiple client accounts that will be drawn on only when a farmer purchases inputs from registered suppliers through the use of the card; (iv) have the ability to restrict inputs on the card to the categories of agricultural inputs specified; (v) have the ability to monitor the types of purchases in real time; (vi) have the ability to manage a system that can produce management reports with the required information (i.e. input type, quantity, unit price, amount per farmer, name of agro-dealer); (vii) be able to provide training to DRD staff, agro-dealers and other partners on: (a) the debit card transaction system; and (b) agricultural inputs to be redeemed; and (viii) have the capacity for a short set-up time in order to ensure quick implementation.

19. The FSPs for the debit cards will be responsible for: (i) the production of the debit cards; (ii) the management of the technical system that supports the debit card system and of transactions through an electronic payment system; (iii) the development, operation and maintenance of a front- and back-end electronic system that secure the completion of transactions between debit card holders and the agro-dealers/service providers; (iv) the provision and installation of point of sale devices at agro-dealer /service provider outlets; (v) training on the debit card system of agro-dealers, implementing partners and DRD management and M&E teams; and (vi) the provision and management of an online data monitoring system that allows for on-the-spot viewing of transactions against client accounts. Minimum specifications⁴⁸ for a debit system are detailed in Annex 4.1.

20. The system design should take account of risks associated with the compensating balance debit card system including: (i) lost or stolen electronic cards; (ii) bias during beneficiary selection; (iii) price fixing by participating agro-dealers; (iv) inability of selected agro-dealers to maintain a consistent supply; and (v) delay in redemption of inputs owing to network failure. The following mitigation measures should be put in place: (i) debit cards must be protected by a PIN number and, preferably photo identification - when lost or stolen, the beneficiary will inform the FSP, who will stop the card and issue a replacement; (ii) during beneficiary selection, bias will be minimized by following CDD-based community identification of beneficiaries in accordance with set criteria; and (iii) price fixing can be minimized through monitoring agro-dealer/service provider prices against manufacturers recommended prices and by prices offered by other dealers/service providers in the township.

⁴⁸ These minimum specifications have been developed by MercyCorps based on field experience in Haiti, Congo

Figure A4.3. CFAVC project ADFS flow of funds and services

C. Service Provider Selection

21. Based on the project ADFS details, including location, compensating balance and lending amounts, the expected project distribution schedule and reporting formats, the project will invite expressions of interest (EoI) from eligible FSPs detailing: (i) the type of technology that will be used for the service; (ii) the FSPs agent network and liquidity management capacity; (iii) indicative product cost; (iv) expected time to first debit card goods/services purchase; (v) FSP data handling and protection systems; and (vi) reporting systems offered. All EoIs will include references from previous clients. Potential FSPs expressing interest in the program will be assessed against a set of issues detailed in Annex 4.3. Short-listed FSPs will be invited to submit detailed proposals in accordance with ADB procurement guidelines. A bid checklist is provided in Annex 4.4. The successful FSP(s) will be required to sign a “Data Protection and Security Agreement” as detailed in Annex 4.5.

22. Selected FSPs will enter into a PPP agreement with MOALI to share the cost of developing and delivering the ADFS, the terms and conditions of which will be subject to negotiations guided by the ADFS specifications detailed in Annex 4.1. FSP contribution under the PPP will be at least 33% of the development cost, supplied in cash and/or kind,⁴⁹ with potential FSPs prepared to offer higher PPP contribution levels more likely to be selected for ADFS delivery.

D. Project Documentation

23. In parallel with the development of the FSPs product, the project will develop Standard Operating Procedures for compensating balance debit card transactions covering (i) geographic targeting; (ii) beneficiary selection; (iii) beneficiary registration; (iv) vendor selection; (v) vendor distribution and redemption process; (vi) vendor reconciliation & repayment process; (vii) debit card transfer; (viii) monitoring, reporting and reconciliation; and (ix) accounting treatment. The

⁴⁹ Subproject staff time, office facilities, etc.

project will also develop a beneficiary training program (e.g. GAP technical training, financial literacy and digital literacy) commencing with a beneficiary skill assessment, which will lead to the development of a hands-on training program that will be field tested before finalization. Beneficiary training programs will be supported by project-trained community-based peer trainers.

Table A4.1: Assumptions and Risks

Risk	Risk Likelihood¹	Risk Severity^{1/}	Assumptions/Mitigating measures
Commercial banks not interested to invest in rural digital financial services	L	H	<ul style="list-style-type: none"> • Project will provide substantial financial incentive for bank participation; • Commercial bank engagement in digital financial services existent and expanding
Smallholder farmers reluctant to borrow for crop input procurement	M	H	<ul style="list-style-type: none"> • Combination of credit access at competitive prices, appropriate GAP technologies, improved input quality and pluralistic advisory services will overcome farmer risk aversion
Input suppliers unwilling to accept digital credit card finance	L	M	<ul style="list-style-type: none"> • The digital credit card will immediately credit input suppliers accounts; • Input suppliers already engaged in various forms of pre-financing of crop input procurement; • Relatively high density of input suppliers will ensure crop input access even if all suppliers don't participate
Market failure leads to inability of farmers to repay crop input loans	M	M	<ul style="list-style-type: none"> • The compensating balance payment largely protects participating banks from loan default; • Smallholder farm households have multiple sources of income which helps buffer price/market downturns for a specific crop; • Holistic market failure across the bean, pulse and oilseed commodities is unlikely;

¹/L = low; M = Moderate; H= High

ANNEX 4.1: MINIMUM SYSTEM SPECIFICATIONS⁵⁰

Summary of General Compensating Balance Debit Card Requirements

A. Summary of Product Needs:

1. An electronic debit card platform shall deliver functionality in a number of key areas, and will specifically:
 - i. Enable debit card distribution to program participants.
 - ii. Enable transactions between participants and approved vendors, permitting payment, up to a capped limit, for locally available goods and services, according to program rules.
 - iii. Provide access to a centralized management platform that supports DRD monitoring of the system.
2. DRD is willing to accept the most suitable hardware and transaction process used by participants and local vendors for debit card transactions. This could include cards with magnetic strips or chips redeemed at Point of Sale devices, voucher codes redeemed through SMS or USSD messages, or smartphone applications that scan barcodes or accept voucher codes. Proposals must include a centralized management platform that is accessible online and provides easy and quick access to debit card transaction data.

B. Minimum Specifications

3. Selected electronic voucher systems will be able to meet the following requirements:
 - a. **Program Set up Requirements**
 - (i) The system must support registration of individual participants and vendors.
 - (ii) The system will accept uploads of spreadsheets containing participant and vendor profile data.
 - (iii) The system will allow DRD, through the FSP, to add or remove additional participant or vendor profiles throughout the program cycle.
 - (iv) The system must allow changes and edits to participant and vendor profiles (e.g., add missing data, correct incorrectly entered data, etc.).
 - (v) The system must support definition of debit card purchase rights (and the borrowing cap and validity period of each debit card).
 - (vi) All funds will be recorded and tracked in the Commonly Transactional Currency identified for each deployment.
 - (vii) The management platform is available in English and Burmese.
 - b. **Communication Requirements**
 - (i) Error messaging will be provided when transactions fail to process. Error messaging should be visible to the participant and vendor and should include reasons for failure and suggested remedy. Errors should also be logged in the management platform. Specific handling of transaction errors and error messaging should be described in the proposal.
 - (ii) Successful transaction messaging should also be provided, which will notify vendors and participants about successful transactions and remaining account balances.

⁵⁰ MercyCorps E-Transfer Implementation Guide, Master Card Centre for Inclusive Growth, Annex 1.

- (iii) System is capable of providing transaction and account total updates to vendors and participants upon their request (for participants account total = currency amount or quantity of goods left, for vendors this account total = total amount sold in established billing cycle).

c. General Transaction Requirements

- (i) Vendors must be provided with a means to authenticate the identity of a participant attempting a transaction.
- (ii) The system must debit participant accounts following a transaction.
- (iii) Transactions will be identified by a unique transaction number.
- (iv) Failed transactions should also be assigned a transaction number.
- (v) The system will track transactions by the following attributes: unique transaction number, vendor, participant, date, time, amount/quantity spent and voucher number.

d. Reporting Requirements

- (i) System can provide both raw, unanalyzed data, and structured reports.
- (ii) All reporting should be downloadable in an excel data format that can be sorted and analyzed by DRD.
- (iii) Reporting can be provided through pre-defined scheduled reports and on-demand reports.
- (iv) Scheduled reports will have defined formats and will be sent to DRD according to a defined timetable. On demand reports will have defined formats and will be available on request.
- (v) Proposals should indicate the specific types of reports that are available.

e. Program Management Requirements

- (i) The DRD management system must be accessible by a range of DRD staff members. Staff members granted access will be assigned a user ID, password and access level based upon their seniority and approval authority. Ideally, the system should track and capture DRD User Profile information (including user ID) for all system interactions. This information must be able to show which DRD user completed actions within the system (including both file uploading and direct interaction with the system to upload and edit specific records).
- (ii) Differing levels of access and permissions is desired.

f. Program Requirements to be handled outside the system

- (i) This compensating balance debit card system will have negative restrictions forbidding use for designated products (e.g., prohibited agrochemicals). Negative restrictions will be handled off-line and will be DRD's responsibility to enforce

ANNEX 4.2: Definition of Terms

Term	Definition/Explanation
Participant	This is a participant in the program who will receive vouchers via the system
Vendor	This is an individual retailer or a retail outlet selected by program staff that will redeem vouchers for participants.
Client	A business or institution that has or will use DRD's electronic voucher platform
Preparer	A field-based DRD or DRD-contracted support person responsible for day-to-day program activities
Approver	A higher-level DRD manager (often a Program Manager) that is responsible for the overall use of the electronic voucher system
Viewer	An DRD staff person or DRD-contracted support person that has access to the electronic voucher system for review and accountability purposes, but does not have "write access"
Deployment	Defines a specific implementation of an electronic voucher system in a designated location in a specific time period.
Voucher	An amount of money provided to a participant in a single transfer
Transaction	An exchange between a participant and a vendor involving redemption of a voucher for the purchase of goods
Confirmation	Notification delivered to participants attempting to make a payment with a voucher value AND to vendors attempting to accept payment from a voucher. Confirmations may be affirmative: "Transaction succeeded" or negative: "Transaction failed".
Common Transactional Currency	This is the currency commonly used in a location which may or may not be the national local currency
Common Local Language	This is the language commonly used in a location and designated for use in a particular implementation
Distribution	The activity of providing a batch of cash or commodity vouchers to a designated set of participants at a specific point in time

ANNEX 4.3: EVALUATING POTENTIAL FINANCIAL SERVICE PROVIDER CAPACITY (FOR FSP SHORTLISTING)

The capacity of the financial service provider (FSP) will have a significant impact – positive or negative – on the program. This questionnaire will help rate potential FSP as low, medium or high risk. Ranking the FSP will help the project to shortlist potential providers and tailor program implementation plans to accommodate their capacity.

A. Service Provider Capacity Quiz

1. At your first meeting, your potential Service Provider:
 - a. Asked lots of questions about your program and needs;
 - b. Talked about the amazing quality of his/her e-transfer product, with few examples that are relevant to your program;
 - c. Didn't show up to your scheduled meeting.
2. When you ask for references, the Service Provider:
 - a. Provides several references that reported positive experiences;
 - b. Provides references that reported mixed positive and negative experiences;
 - c. Refuses to provide references.
3. When you ask for a draft contract, the Service Provider:
 - a. Sends you a draft that clearly explains the provider's role and responsibility in your e-transfer program;
 - b. Sends a draft contract that is clearly intended for another purpose (e.g., salary payments instead of mobile money credit);
 - c. Asks you to develop a sample contract.
4. When probing for details about how the compensating balance account will work, the Service Provider:
 - a. Provides clear answers with processes that sync well with your distribution needs;
 - b. Cannot answer all questions, but offers to connect you to a technical expert who can answer your questions within a reasonable timeframe;
 - c. Evades your questions or promises answers and never provides them.
5. The Service Provider you are evaluating:
 - a. Has recently delivered the same (or higher) volumes of credit transactions in your program's targeted geographic area;
 - b. Has delivered similar volumes of credit transactions in another geographic area;
 - c. Has not previously delivered high volumes credit transfers.
6. The Service Provider's customer service and support systems:
 - a. Are robust, convenient and offer clear escalation procedures for potential problems;
 - b. Do not have clear customer service procedures, but are willing to develop them for your program;
 - c. Do not offer clear support systems and do not seem interested in developing them.

7. When asked about protecting participant's personal information, the Service Provider:
 - a. Provides assurances, in writing, about how participant data is used, stored and protected from exploitative use;
 - b. Takes measures to protect program participant data, but does not have them written down;
 - c. Does not have clear data protection practices or policies.
8. When asked about agent networks and float management, the service provider...
 - a. Has agents located close to program participants and has managed significant float demands in the past;
 - b. Has not managed cash transfers at the scale you need, but has a reasonable strategy for expanding agent networks and managing float to meet your needs;
 - c. Assures you that they can meet your needs without providing details.

B. Answer key:

1. If your potential Service Provider answered mostly A's, you are headed in the right direction. This FSP can be considered "low risk."
2. If your Service Provider answered mostly B's, you are working with a "medium risk" Service Provider. Proceed with caution and consider staffing up around FSP management.
3. Did your Service Provider answer mostly C's? Then you are dealing with a "high risk" FSP. Generally, such a Service Provider should not be shortlisted. If you decide to work with this FSP, you will need to take on an active capacity building role. Processes that are often problematic for high risk FSPs include agent network management, new client (program participant) registration, reporting, liquidity management and customer service.

ANNEX 4.4: Draft Service Provider Bid Evaluation Checklist

COMPENSATING BALANCE DIGITAL CREDIT LINE BID CHECKLIST		
<i>This tool can be used for assessing short-listed Service Provider's bid submissions to ensure that key services are offered.</i>		
Product Offering & Technical Specifications	Meets program requirements? (Y/N)	Comments
Scope of services - what type of technology will be used (SMS based SIM kit? USSD? ATM/credit cards?)		
Are offline disbursement options provided in the event of network outage? If yes, how are disbursements managed and documented?		
Is hardware (e.g. a debit card) required for each beneficiary? How are these procured and distributed?		
Will the FSP provide required payment hardware? At what cost?		
Agent Network & Liquidity		
Does the FSP have an established network of agents or pay-in points close to your targeted participants? If not, are they willing to mobilize agents for program distributions?		
What days/times are agents available?		
Are there limitations or restrictions to geographic areas served by your FSP?		
Agent coverage: How many cash-ins can an agent realistically complete in a day? Are sufficient agents available to meet the needs of our participants?		
Program Participant Registration, Account Opening and Data Management		
Are participants required/allowed to establish individual accounts?		
Can transfers be sent to participants that already have mobile money accounts, in addition to those establishing new accounts?		
What ID, if any, is required to open an account?		
What alternative forms of ID are accepted if no formal ID is available?		
What privacy and/or data protection is offered by the FSP?		
Pricing, Fees and Account Funding		
Is the fee structure clear?		
How and when will fees be billed?		
If fees are charged upon use of the debit card, can these fees be paid directly by Project if required? (Instead of by the participant?)		
How and where does the project transfer money to an escrow account in preparation for establishing the compensating balance beneficiary accounts?		
How does reconciliation occur with that escrow account? Can the project be reimbursed if excess funds remain at the end of the program?		

	Are fees fixed for the term of the contract- ensuring that no changes in fees will occur?		
Customer Service and Support			
	Who will be the point person for the project? Are they easily accessible?		
	What additional support procedures/resources are available to support the project? Are preferred customer service point people available to participants?		
	Customer service, beneficiaries: How can beneficiaries access support? Is there a toll-free support line? What are the hours of operation?		
Disbursement Process			
	Does the FSP require a specific format to approve a debit card?		
	What is the timeline for sending a debit card request?		
Input suppliers			
	Has the FSP contracted sufficient input suppliers within reasonable proximity of program clients?		
	Are all contracted input suppliers correctly registered for the services they provide?		
	Do input suppliers have sufficient range and quantities of registered inputs?		
	Do all contracted input suppliers have the hardware for accepting debit card payments?		

ANNEX 4.5: Draft Data Protection and Security Agreement⁵¹

DRAFT DATA PROTECTION AND SECURITY STATEMENT

(This draft is based on previous MercyCorps agreements under its various E-Transfer programs)

AGREEMENT BETWEEN:

1 The MOALI Department for Rural Development or its Service Agent (“Data Controller”); and
2 YYYY, having its registered office at [...] (the “Data Processor”).

PURPOSE OF THIS AGREEMENT

A. For the purpose of facilitating electronic voucher transfers from the Data Controller to a beneficiary receiving the voucher transfer, the Data Controller collects and processes the Personal Data of such beneficiaries.

B. The Data Controller has engaged the Data Processor to render the Services which includes processing beneficiary data on the Data Controllers’ behalf.

C. The Data Controller is subject to laws, regulations and codes of conduct, principles and operational standards that place obligations on the Data Controller to respect the privacy and protect the Personal Data of beneficiaries in the processing of such data, whether independently or through appointed Data Processors.

D. Accordingly, this agreement pertains to the protection of Personal Data accessed or otherwise received; and processed by the Data Processor on the Data Controller’s behalf in the course of rendering the Services.

IT IS AGREED:

1. DEFINITIONS AND INTERPRETATION

1.1 In this agreement:

Data Controller means the Agency being the person who determines the purposes for which and the manner in which any Personal Data is, or is to be, processed.

Data Processor means the Affiliate/ Service Provider, a person or organization that processes Personal Data on behalf of the Data Controller during the course of rendering the Services.

Data Subject means the beneficiaries of electronic voucher transfers facilitated by the Agency and persons to whom the Personal Data refers.

Personal Data means any personal information including identifying information such as the name, identification or passport number, mobile telephone number, email address, voucher transaction details, of whatever nature, format or media that by whatever means, is provided to the Data Processor by the Data Controller, is accessed by the Data Processor on the authority of the Data Controller or is otherwise received by the Data Processor on the Data Controller’s behalf and includes transactional or other information associated with the Data Subject generated by the Data Processor in the course of providing the Service to the Data Controller.

⁵¹ MercyCorps E-Transfer Implementation Guide, Master Card Centre for Inclusive Growth: Annex 4

Processing in relation to Personal Data, includes the obtaining, recording or holding of such data or carrying out any operation or set of operations on the data, including organization, adaptation, or alteration; disclosure by transmission, dissemination, or otherwise; and alignment, combination, blocking, erasure, or destruction.

Schedule means the schedules annexed to and forming part of this agreement.

Services means the specific activities for which the Data Controller has engaged the Data Processor as set out in the main/ master services agreement.

2. DATA PROCESSING

The Data Processor agrees to process the Personal Data to which this agreement applies, and in particular the Data Processor agrees that it shall:

- a. process the Personal Data in accordance with the terms and conditions set out in this agreement and where the standards imposed by the data protection legislation regulating the Data Processor processing of the Personal Data are higher than those prescribed in this agreement, then in accordance with such legislation;
- b. process the Personal Data strictly in accordance with the purposes relevant to the Services in the manner specified from time to time by the Data Controller; and for no other purpose or in any other manner except with the express prior written consent of the Data Controller;
- c. implement appropriate technical and organizational measures to safeguard the Personal Data from unauthorized or unlawful processing or accidental loss, destruction or damage, having regard to the state of technological development and the cost of implementing any measures; such measures shall ensure a level of security appropriate to the harm that might result from unauthorized or unlawful processing or accidental loss, destruction or damage and to the nature of the Personal Data to be protected;
- d. regard the Personal Data as confidential data and not disclose such data to any person other than to employees, agents or sub-contractors to whom disclosure is necessary for the performance of the Service and subject to [...] below or except as may be required by any law or regulation affecting the Data Processor;
- e. implement technical and organizational measures to ensure the confidentiality, privacy, integrity, availability, accuracy and security of the Personal Data including establishing organizational policies for employees, agents and sub-contractors aimed at complying with the Data Processor's duties to safeguard the Personal Data in accordance with this agreement;
- f. implement backup processes as agreed between the Data Controller and Data Processor to procure the availability of the Personal Data at all times and ensure that the Data Controller will have access to such backup of the Personal Data as is reasonably required by the Data Controller;
- g. ensure that any disclosure to an employee, agent or sub-contractor is subject to a binding legal obligation to comply with the obligations of the Data Processor under this agreement including compliance with relevant technical and organizational measures for the confidentiality, privacy, integrity, availability, accuracy and security of the Personal Data. For the avoidance of doubt, any agreement with an employee, agent or sub-contractor shall not relieve the Data Processor of its obligation to comply fully with this agreement, and the Data Processor shall remain fully responsible and liable for ensuring full compliance with this agreement;
- h. comply with any request from the Data Controller to amend, transfer or delete Personal Data; provide a copy of all or specified Personal Data held by it in a format and or a media

reasonably specified by the Data Controller within reasonable timeframes as agreed between the parties [Agency to insert relevant time periods at its discretion];

- i. should the Data Processor receive any complaint, notice or communication which relates directly or indirectly to the processing of the Personal Data or to either party's compliance with applicable law, immediately notify the Data Controller and provide the Data Controller with full co-operation and assistance in relation to any complaints, notices or communications;
- j. promptly inform the Data Controller if any Personal Data is lost or destroyed or becomes damaged, corrupted or unusable and at the request of the Data Controller, restore such Personal Data at its own expense;
- k. in the event of the exercise by Data Subjects of any rights in relation to their Personal Data, inform the Data Controller as soon as possible,
- l. assist the Data Controller with all Data Subject information requests which may be received from any Data Subject in relation to any Personal Data;
- m. not use the Personal Data of Data Subjects to contact, communicate or otherwise engage with the Data Subjects including transmission of any marketing or other commercial communications to the Data Subjects, except in accordance with the written consent of the Data Controller or to comply with a court order. For the avoidance of doubt, the Data Processor is not prohibited from contact, communication or engaging with the Data Subject in so far as this does not involve processing of Personal Data and the Data Processor ensures that the promotion or offer of services is not in any manner associated to the Data Controller or the Data Controller's services;
- n. notify the Data Controller of the country(s) in which the Personal Data will be processed where such country(s) is not the country of the Data Processor's registered office;
- o. not process or transfer the Personal Data outside of the country of its registered office except with the express prior written consent of the Data Controller pursuant to a request in writing from the Data Processor to the Data Controller;
- p. permit and procure that its data processing facilities, procedures and documentation be submitted for scrutiny by the Data Controller or its authorized representatives, on request, in order to audit or otherwise ascertain compliance with the terms of this agreement;
- q. advise the Data Controller of any significant change in the risk of unauthorized or unlawful processing or accidental loss, destruction or damage of Personal Data; and
- r. report [in accordance with agreed reasonable timeframes] to the Data Controller on the steps it has taken to ensure compliance with clause 3.1. of this agreement.

3. WARRANTIES

The Data Processor warrants that:

- a. it will process the Personal Data in compliance with laws, enactments, regulations, orders, standards and other similar instruments applicable to the Data Processor; and in accordance with the terms and conditions of this agreement;
- b. in order to observe the rights of ownership and/or other proprietary or intellectual property rights of the Data Controller in the Personal Data, not copy, retain or process the Personal Data in any manner over the course of this agreement and upon expiration or termination of this agreement, except as required by law or in accordance this agreement.

4. INDEMNITY

The Data Processor agrees to indemnify and keep indemnified and defend at its expense the Data Controller against all costs, claims, damages or expenses incurred by the Data Controller

or for which the Data Controller may become liable due to any failure by the Data Processor or its employees, subcontractors or agents to comply with the obligations under this agreement.

5. APPOINTMENT OF SUB-CONTRACTORS AND AGENTS/ COMPLIANCE BY SUB-CONTRACTORS AND AGENTS

The Data Processor may authorize a third party (sub-contractor or agent) to process the Data:

- a. subject to the terms of this agreement;
- b. subject to the Data Controller's prior written consent, the validity of the consent will be conditional on the Data Processor supplying the Data Controller with full and accurate details of the sub-contractors or agents; and
- c. provided the relevant sub-contractor's or agent's contract terminates automatically on the termination of this agreement for any reason.

6. TERMINATION

6.1 This agreement shall terminate automatically upon termination or expiry of the Data Processor's obligations in relation to the Services.

6.2 The Data Controller shall be entitled to terminate this Agreement forthwith by notice in writing to the Data Processor if:

- a. the Data Processor is in a material or persistent breach of this Agreement which, in the case of a breach capable of remedy, shall not have been remedied within 10 days from the date of receipt by the Data Processor of a notice from the Data Controller identifying the breach and requiring its remedy; or
- b. the Data Processor becomes insolvent, has a receiver, administrator, or administrative receiver appointed over the whole or any part of its assets, enters into any compound with creditors, or has an order made or resolution passed for it to be wound up (otherwise than in furtherance of a scheme for solvent amalgamation or reconstruction).

6.3 On termination of this agreement the Data Processor shall, in accordance with the direction of the Data Controller:

- a. deliver or destroy all Personal Data supplied by the Data Controller in its possession or under its control;
- b. instruct all its employees, agents and sub-contractors to facilitate and ensure the delivery or destruction of the Personal Data including copies of the Personal Data in accordance with the Data Controller's direction.

7. GOVERNING LAW

This agreement will be governed by the laws of the Republic of the Union of Myanmar, and the parties submit to the exclusive jurisdiction of the Courts of the Republic of the Union of Myanmar for all purposes connected with this agreement, including the enforcement of any order or judgment made under or in connection with it.

8. WAIVER

Failure by either party to exercise or enforce any rights available to that party or the giving of any forbearance, delay or indulgence shall not be construed as a waiver of that party's rights under this agreement.

9. INVALIDITY

If any term or provision of this agreement shall be held to be illegal or unenforceable in whole or in part under any enactment or rule of law, such term or provision or part shall to that extent be deemed not to form part of this agreement, but the enforceability of the remainder of this agreement shall not be affected, provided however that if any term or provision or part of this agreement is severed as illegal or unenforceable, the parties shall seek to agree to modify this agreement to the extent necessary to render it lawful and enforceable, and as nearly as possible to reflect the intentions of the parties embodied in this agreement, including without limitation the illegal or unenforceable term or provision or part.

CONSULTANTS TERMS OF REFERENCE

I. INDIVIDUAL CONSULTING SERVICES

A. Start-up Procurement Specialist (international, 5 person-months)

1. **Scope of Work.** The Procurement/Project Start-up Specialist will assist the EA and implementing agencies (IAs) during the project start up period, prior to and overlapping with the mobilization of the PIC consultants (and PMU staff). He/she will work closely with other start-up team members to initiate procurement activities for the project in accordance with ADB procedures and requirements and provide training to EA/IA and PMU staff on procurement.

2. **Detailed Tasks.** The Specialist will assist EA (and IAs) in procurement activities and ensure compliance with ADB requirements by providing full assistance and on-the-job training to EA staff on all aspects of ADB procurement procedures, in the timely recruitment of consultants and procurement of good and works. The responsibilities will include:

- (i) Assist the EA to undertake all activities related to the initial operation and implementation of the project;
- (ii) Review and update the Procurement Plan in the Project Administration Manual (PAM) to reflect possible changes since project fact-finding.
- (iii) Assemble and provide copies of all relevant ADB procurement documents, guidelines and procedures to the EA, including a master list of such documents for future reference.
- (iv) Support and assist the EA in various stages of recruitment of consultants in compliance with ADB requirements for project implementation consultants, including revision/preparation of TORs, assessment criteria, technical assessments, conduct of consultant selection committee meetings, submission to financiers, etc., in collaboration with the technical advisor;
- (v) Support the EA in the preparation of procurement documents, including preparation and finalization of Bidding Documents and Invitation for Bids (IFB) for procurement of various works and goods issuance of IFB, conduct of pre-bid meeting and bid-opening, preparation and finalization of Technical Bid Evaluation Reports (TBER), conducting of opening of the financial bids and evaluation of financial bids, preparation and finalization of Price Bid Evaluation Reports (PBER), and contract negotiating with the most responsive bidder and signing the Contract;
- (vi) Assist the EA/IA in contract interpretation, contract administration and documentation on contractual matters, and any additional tasks as assigned time to time that are relevant to the assignment;
- (vii) Set up a monitoring system for procurement deadlines including monitoring (a) the administration of consulting service contracts, (b) the payment of services rendered/goods delivered, and (c) the quality of consulting services and/or goods and civil works provided;
- (viii) Review existing institutional arrangement for procurement and recommend improvements including assisting PMU in establishing institutional mechanisms including the approval systems.
- (ix) Design procurement workflow, formulation of procurement committees, procurement procedures including bid opening and evaluation, record keeping, complaint handling mechanisms, etc.
- (x) Conduct procurement workshops/ trainings to EA/IAs personnel as well as to prospective bidders/suppliers; and
- (xi) Undertake any other duties as may be reasonably assigned.

3. Minimum Qualification Requirements

- (i) Bachelor's degree or equivalent with 5 years of relevant working experience.
- (ii) Familiarity with (a) internationally-funded project preparation and implementation issues; (b) government accounting systems; and (c) procurement procedures of international organizations/agencies, especially those of ADB.

B. Start-up Financial Management Specialist (international, 3 person-months)

4. **Scope of Work.** The Financial Management Specialist will assist the EA and IAs during project start up period, prior to and overlap with the mobilization of the PIC consultants (and PMU staff). He/she will work closely with other start-up team members to establish accounting procedures and systems for the project in accordance with ADB procedures and requirements, and to provide training to EA/IA and PMU staff.

5. Detailed Tasks and/or Expected Output. The specialist will:

- (i) Assist EA and IAs in coordinating the fund flow mechanism, establishment of advance account and sub-accounts in accordance with ADB procedures;
- (ii) Review, and update if necessary, the project accounting and financial management arrangements in the Project Administration Manual (PAM).
- (iii) Provide training to the EA/IA and PMU accountant/consultant on setting up financial management systems including fund flow, disbursement mechanisms / plans;
- (iv) Assist in establishing financial management procedures for the PMU;
- (v) Assess / review project cost structures;
- (vi) Assess in-kind or cash co-financing situation from counterpart agencies;
- (vii) Prepare a project budget, withdrawal request, disbursement and expenditures plan for the ADB financing packages;
- (viii) Establish systems to implement project cost controls;
- (ix) Prepare tables and spreadsheets for financial reporting (format);
- (x) Prepare a succinct project accounts manual to document project accounting and financial management procedures and templates for ADB, and recommend updates to the PAM if needed to reflect possible changes since project fact-finding;
- (xi) Train IA staff in procedures to maintain project financial records and EA staff in consolidating project financial reports from IAs; and
- (xii) Undertake any other duties as may be reasonably assigned.

6. Minimum Qualification Requirements

- (i) Bachelor's degree or equivalent with 10 years of relevant working experience.
- (ii) Familiarity with: (a) internationally-funded project preparation and implementation issues; (b) government accounting systems; and (c) accounting and financial management requirements of international organizations/agencies, especially those of ADB.

C. National Technical Advisor (national, 5 person-months)

7. **Scope of Work.** The National Technical Advisor will assist the EA and IAs during the project start up period, prior to and overlapping with the mobilization of the PIC consultants (and PMU staff). He/she will work closely with other start-up team members to backstop the establishment of the PMU and other institutional arrangements, procurement, accounting and

financial management and project performance monitoring, evaluation and reporting activities for the project in accordance with ADB procedures and requirements and assist in training to EA/IA and PMU staff as required.

8. **Detailed Tasks and/or Expected Output.** The Specialist will:

- (i) Be responsible to provide support for day-to-day management and coordination of the project and for planning, administering and coordinating all project activities;
- (ii) Coordinate and supervise activities under the project and provide advice on technical and administrative matters and safeguard issues;
- (iii) Provide advice in the design, planning, and supervision, addressing safeguard issues;
- (iv) Ensure an efficient and effective filing system is set up for the project;
- (v) Prepare a brief end-of-assignment report to document work undertaken and make recommendations for ongoing management of the project; and
- (vi) Undertake any other duties as may be reasonably assigned.

9. **Minimum Qualification Requirements**

- (i) Bachelor's degree or equivalent with 7 years of relevant working experience;
- (ii) Familiarity with (a) internationally-funded project management issues, including safeguards; (b) government project management systems and procedures; and (c) project management procedures of international organizations/agencies, especially those of ADB.

D. Senior Land Administration Services Adviser (international, 8 person-months)

10. **Scope of Work.** The adviser will lead a specialist consultant team that will assist the MOALI Department of Agriculture Land Management and Statistics (DALMS), in partnership with the Land Use Division of the Department of Agriculture (DoA) to develop a more efficient, digitalized and client friendly land administration service.

11. **Detailed Tasks.** The adviser will coordinate assistance to DALMS to:

- (i) Specify and procure 24,000 km² of RapidEye 5m resolution satellite imagery;
- (ii) Develop participatory land use maps for the 14 project districts;
- (iii) Compile a fit for purpose GIS database;
- (iv) Develop capacity building programs for participatory township land administration, targeting township DALMS and the General Administrative Department (GAD) staff; and
- (v) Develop an awareness raising program for land owners and improved, demand driven and accessible land administration service delivery systems.

12. **Minimum Qualification Requirements**

- (i) Master's degree in land management or geography;
- (ii) At least 10 years of experience in the development of land information and cadastre systems in emerging economies;
- (iii) Experience in the development of customer relations in land administration.

E. Agricultural Digital Finance Specialist (international, 5 person-months)

13. **Scope of Work.** The specialist will support the Ministry of Agriculture, Livestock and Irrigation (MOALI) Department of Rural Development (DRD) to contract a qualified financial service provider (FSP) for the development and implementation of an Agricultural Digital Finance

Service (ADFS) and assist DRD to establish and implement a community-based beneficiary identification system and supporting monitoring program.

14. **Detailed Tasks.** The responsibilities will include:

- (i) Assist MOALI to survey potential beneficiaries and input and service providers to evaluate the most effective technology for implementing the ADFS, including the use of mobile phones for financial transactions;
- (ii) The preparation of an invitation to qualified FSPs for shortlisting for the development and delivery of an Agricultural Digital Finance Service (ADFS) and overseeing its implementation;
- (iii) The preparation of a detailed bid document for short-listed FSPs for the preparation and implementation of the ADFS and supporting the PMU in overseeing the bidding process;
- (iv) The development of a contractual agreement between MOALI and the successful FSP(s) for the delivery of the ADFS;
- (v) Develop an ADFS monitoring program; and
- (vi) Training of DRD staff in (a) the implementation of the ADFS; (b) transparent community driven processes for selecting ADFS beneficiaries; and (c) the implementation of an ADFS monitoring program;

15. **Minimum Qualification Requirements**

- (i) Master's degree in finance, commerce, economics or equivalent with at least 10 years of relevant working experience in emerging economies;
- (ii) Familiarity with (a) rural financial service delivery in emerging economies; (b) digital financial services; and (c) financial services monitoring and evaluation.

II. PROJECT IMPLEMENTATION CONSULTANTS

16. **Objective of the assignment.** The Project Implementation Consultants (PIC) will provide management and technical assistance to the EA and IA in the implementation of the project, strengthen technical and management capacities of the participating government agencies and project stakeholders, and ensure compliance with the financing agreement and government policies. The PIC will work in close coordination with the consultants recruited for capacity building and climate smart agriculture (CSA) training, contracted under a separate package.

17. **Scope of services.** In close coordination with the project director and project manager, and other staff based in the PMU, the PIC as counterpart of the government staff will perform the following but not limited to:

- (i) Support, strengthen, coordinate and guide PMU, PIUs, implementing agencies and contractors in the design and operation of the infrastructure related subprojects;
- (ii) Detailed planning of yearly activities in all aspects of the agreed and foreseen implementation schedules including budget;
- (iii) Review feasibility studies and detailed engineering designs for subprojects prepared by the feasibility and detailed design consultants;
- (iv) Supervise construction of civil works in conjunction with the implementing agencies (notably IWUMD, DRD and DOA);
- (v) Provide necessary capacity building training;
- (vi) Assist farmers water user groups and or cooperatives in establishing operation & maintenance systems;
- (vii) Assist PMU, PIU and implementing agencies in the procurement of works, goods and services including contract management (oversee procurement activities, particularly bid opening, and supervise the bid evaluation process, and endorse bid evaluation reports for all international competitive bidding and national competitive bidding procurement packages);
- (viii) Establish and maintain the required project accounting arrangement and other implementation recording systems for the overall project;
- (ix) Coordinate financial management of the implementing agencies and consolidate project accounts and financial statements;
- (x) Support the PMU to recruit consultants and process payments to contractors/consultants/suppliers;
- (xi) Support the PMU to operate the imprest account and prepare and submit withdrawal applications;
- (xii) Plan and develop the safeguards monitoring and evaluation systems and carry out environmental and social due diligence of each subproject;
- (xiii) Assist in the preparation of safeguard documents in compliance with LARF, EARF, EMDF and Gender Action Plan;
- (xiv) Prepare quarterly progress reports; annual progress reports, PPMS, safeguard monitoring reports and gender action plan monitoring reports;
- (xv) Establish baseline data to monitor project impacts, including regular monitoring of physical and financial progress;
- (xvi) Assist the executing and implementing agencies in monitoring the project implementation, including periodic site inspections;
- (xvii) Act as the secretariat for the Project Steering Committee; and
- (xviii) Any other activities for delivering the envisaged outputs of the project and achieving desired outcome.

18. Note that for combined international and national positions below, the national specialists will have greater responsibility for delivering training. International experts will have at least 15 years of experience relevant to the assignment while national experts must have minimum 7 years of relevant experience.

A. Value Chain Specialist and Team Leader (international, 22 person-months and national, 70 person-months (Deputy TL))

19. The objective of this position is to assist the Project Director of the PMU in ensuring efficient and timely implementation of the project, management of the PIC consultants, and effectively coordinating and linking all value chain activities and, thereby, strengthening all value chains.

20. The team leader will work closely with the Project Director and Project Manager of the PMU in developing the workplans and budgets and directing all aspects of implementation. The other PIC consultants are involved in (i) assisting the implementing agencies in specific subproject technical areas that strengthen the value chains and the linkages, and (ii) in assisting the PMU in financial management, in integrating the social development and gender action plan, and ensuring the social safeguards, and environmental safeguards and management plans.

21. **Minimum qualifications.** Relevant degree, e.g. in agricultural economics, agribusiness, business management, or agricultural marketing; years experience in leading long-term value chain development projects, preferably on ADB-funded, long-term projects; experience in project management of large teams with diversified professional roles and responsibilities; experience working in value chain development in Southeast Asian countries; excellent English speaking and writing skills.

22. The scope of work of the TL includes:

- Assist the PMU Project Director and the IAs in developing a detailed workplan for project implementation, and in establishing an appropriate management and Project Performance Monitoring System;
- Provide value chain technical planning and implementation guidance to the PIC technical team, the EA and IAs (at the Union, region, district, and township levels), and at the stakeholder level;
- Ensure selection criteria on project beneficiary and location on subprojects are adhered to by the IAs and the technical team;
- Ensure linkages among value chain stakeholders and the various subprojects, particularly centering on links with improved private seed farms;
- Develop contract farming models and provide training on these to IAs;
- With the procurement specialists, work closely with the national procurement specialist within the PMU and assist in reviewing and identifying procurement needs within the procurement plan and the detailed technical specifications of equipment, materials and civil works. The procurement will be in accordance with ADB Procurement Guidelines and those of the Republic of the Union of Myanmar;
- Ensure, in coordination with the gender specialists and the separate capacity building team, that the gender action plan is being implemented by IAs, with support as needed from sector specialists;
- Assist the Project Director in writing, presenting, and submitting the required progress reports as described in the PAM; and

- Coordinating the team and liaising closely with the capacity building and CSA training consultancy package.

B. Irrigation Supervision Engineer (international, 6 person-months and national, 26 person-months)

23. **Minimum qualifications.** Relevant degree, e.g., in civil engineering, with an emphasis on water management and irrigation systems; experience in irrigation design and in particular construction supervision; experience working in irrigation engineering in Southeast Asian countries; excellent English speaking and writing skills.

24. The scope of work includes:

- Assist the IWUMD and PMU in
 - reviewing the bill of quantities and the bid preparation, bidding, and bid evaluation of the irrigation work on Chepa Seed Farm and the Kyi Ywa Pumping Irrigation Subprojects
 - employing the selection criteria to confirm the subprojects that are eligible for improving the irrigation infrastructure
 - preparing a detailed workplan, technical design, management, and monitoring system for the improved irrigation infrastructure of all the prescribed irrigation and small reservoir subprojects in the PAM;
- Provide technical and management support to the IWUMD professional staff at the Union, region, district, and township levels (together with PIU staff) for effective project implementation of all irrigation projects. This includes helping to oversee the design process carried out by the feasibility and detailed design contractor and setting up a construction supervision system;
- Provide capacity building to the IWUMD in supervising the construction of the irrigation infrastructure as per the supervision system, and to the Water Users Groups in the technical responsibilities in managing and maintaining the irrigation systems (together with the water management specialist from the capacity building consultancy team);
- Assist the IWUMD and PMU in preparing specifications for tubewell drilling contracts and associated drip irrigation equipment;
- Ensure that the gender action plan recommendations are being implemented by the IA and contractors, for the irrigation activities; and
- Contribute to the regular reporting requirements of the PMU in irrigation subprojects.

C. Road Supervision Engineer (international, 5 person-months and national, 19 person-months)

25. **Minimum qualifications.** Relevant degree, e.g., in civil engineering, with an emphasis on roads; experience in road design including construction supervision, preferably farm feeder roads; excellent English speaking and writing skills.

26. The scope of work includes:

- Assist the DRD and PMU in
 - employing the selection criteria to confirm the subprojects that are eligible for improving the farmer feed road infrastructure
 - preparing a detailed workplan, technical design, management, and monitoring system for the improved farmer feed road infrastructure of all the prescribed farmer feed road subprojects in the PAM;

- Provide technical and management support to the DRD professional staff at the Union, region, district, and township levels (together with PIU staff) for effective Project implementation of all farm feeder projects. This includes helping to oversee the design process carried out by the feasibility and detailed design contractor and setting up a construction supervision system, and then training staff in this system;
- Ensure that the gender action plan recommendations are being implemented by the IA and contractors, for the farm feeder road activities; and
- Contribute to the regular reporting requirements of the PMU in farmer feed road subprojects.

D. Supervision Engineer (for DOA seed farms) (national, 24 person-months)

27. **Minimum qualifications.** Relevant degree, e.g., in civil engineering, with an emphasis on buildings; experience in design and including construction supervision, preferably for buildings; excellent English speaking and writing skills.

28. The scope of work includes:

- Assist the DOA and PMU in preparing a detailed workplan, technical design, management, and monitoring system for the DOA seed farm improvements;
- Assist the DOA and PMU in reviewing the bill of quantities and the bid preparation, bidding, and bid evaluation of the Chepa Seed Farm infrastructure;
- Provide technical and management support to the DOA professional staff at the Union, region, district, and township levels (together with PIU staff) for effective Project implementation of seed farm improvement. This includes helping to oversee the design process carried out by the feasibility and detailed design contractor (e.g. for buildings including seed storage facilities on the seed farms and other related infrastructure, liaising closely with the irrigation and road engineers) and setting up a construction supervision system, and then training staff in this system;
- Ensure that the gender action plan recommendations are being implemented by the IA and contractors, for the DOA seed farm activities; and
- Contribute to the regular reporting requirements of the PMU in seed farm subprojects.

E. Financial Management Specialist (international, 8 person-months and national, 46 person-months)

29. **Minimum qualifications.** Relevant degree e.g. in accounting or CPA, master's degree in finance or MBA; experience working in financial management on international development projects in developing countries, with preference given to experience on ADB-funded projects; excellent English speaking and writing skills.

30. The objective of the position is to ensure sound finance, accounting, and audit procedures are in place and implemented. The scope of work includes:

- Provide training in accounting and financial management to the PMU's Finance Officers;
- Train IA staff in procedures to maintain project financial records and EA staff in consolidating project financial reports from IAs;
- Develop and help implement a financial planning system for Project implementation and its subsequent operation (unless already done by start-up consultants). Develop long, medium-term and annual operating plans and schedules as agreed between

- ADB, MOPF, and the EA (MOALI) for Project implementation and subsequent administrative operation;
- Together with the PMU Finance Officers, develop and establish a manual and standard procedures for Project accounting to the standard agreed between ADB, MOPF, and the EA (unless already done by start-up consultants). Help ensure this is implemented;
 - Monitor and report on a monthly basis during the first year of project implementation regarding the progress of various actions listed in the time-bound action plan for financial management;
 - For internal control, funds flow management, and financial reporting, develop and make operational a manual and procedures (unless already done by start-up consultants) as agreed between ADB, MOPF, and the EA for Project financial management, for use by the PMU in project implementation and the executing and implementing agencies to operate;
 - For audit planning, to comply with the terms and standards agreed between ADB, MOPF, and the EA, prepare the TOR for independent external auditors to conduct audits of the Project accounts, use of advance accounts, and related disbursement procedural matters, and advise and assist the EA in the recruitment of specialists to conduct internal audits of the project accounts and advance account activities; and
 - For audit management, advise and assist the PMU in facilitating external and internal audits.

F. Procurement Specialists (international, 9 person-months and national, 37 person-months)

31. **Minimum Qualifications.** Bachelor's degree or equivalent with 5 years of relevant working experience. Familiarity with (a) internationally-funded project preparation and implementation issues; (b) government accounting systems; and (c) procurement procedures of international organizations/agencies, especially those of ADB.

32. The Specialist will assist EA, IAs and PMU in procurement activities and ensure compliance with ADB requirements by providing full assistance and on-the-job training to EA and IA (including PMU) staff on all aspects of ADB procurement procedures, in the timely recruitment of consultants and procurement of goods and works. The responsibilities will include:

- (i) Assist the EA/IAs/PMU to undertake all activities related to the operation and implementation of the project;
- (ii) Review and update the Procurement Plan in the Project Administration Manual (PAM) on an ongoing basis.
- (iii) Support and assist the EA/IAs/PMU in various stages of recruitment of consultants in compliance with ADB requirements for project implementation consultants, including revision/preparation of TORs, assessment criteria, technical assessments, conduct of consultant selection committee meetings, submission to financiers, etc., in collaboration with the technical advisor;
- (iv) Support the EA/IAs/PMU in the preparation of procurement documents, including preparation and finalization of Bidding Documents and Invitation for Bids (IFB) for procurement of various works and goods issuance of IFB, conduct of pre-bid meeting and bid opening, preparation and finalization of Technical Bid Evaluation Reports (TBER), conducting of opening of the financial bids and evaluation of

- financial bids, preparation and finalization of Price Bid Evaluation Reports (PBER), and contract negotiating with the most responsive bidder and signing the contract;
- (v) Assist the EA/IAs/PMU in contract interpretation, contract administration and documentation on contractual matters, and any additional tasks as assigned time to time that are relevant to the assignment;
- (vi) Ensure the monitoring system is implemented for procurement deadlines including monitoring (a) the administration of consulting service contracts, (b) the payment of services rendered/goods delivered, and (c) the quality of consulting services and/or goods and civil works provided; and
- (vii) Undertake any other duties as may be reasonably assigned.

G. Value Chain Gender Specialists (international, 3 person-months intermittent)

33. **Minimum qualifications.** Relevant degree, preferably a master's degree, in agricultural economics or similar degree with strong expertise in women's role in agricultural value chains; demonstrated experience in working on gender issues in the Southeast Asia or Asia region; excellent knowledge of and practical experience in undertaking value chain analyses, preferably with a gender perspective; strong analytical, research and writing skills, and command of written English..

34. The major objective of the position is to produce an analytical report (see phases below – estimated total time required: 2 pm) containing the gender analysis of each of the targeted crop value chains addressed by the CFAVC project in Myanmar. The report will be based on qualitative and quantitative data collection and analysis, including primary data from field research. The report will include (i) analytical framework and methodological approach; (ii) gender analysis of the targeted crop value chains, including findings about gender specific opportunities and constraints found along the value chains; (iii) recommendations for including gender in the agribusiness policies that will be formulated under the project (a 5-page policy brief will be developed); and, (iv) recommendations for making agribusiness programs/projects/subprojects gender responsive. The approach and methodology should promote building capacity for gender-responsive agricultural value chain analysis within DOP and DOA (including the MOALI gender focal points) and relevant partners, and ensure that the results of the gender analysis are widely disseminated and utilized in policy and program planning. The consultant is also expected to provide technical advice to the agribusiness policy unit on key policy issues within the targeted value chains from the social and gender perspective.

35. In addition, the consultant may be asked to provide services (for a total of 1 pm) in relation to very specific activities included in the gender action plan such as work with the PMU International/National M&E Specialist(s) to ensure that the gender and pro-poor indicators and targets in the DMF and the gender action plan are included in the PPMS of the project or prepare the materials for raising awareness on gender equality in the targeted value chains (why and how).

36. Process and Deliverables for the analytical report

- (i) **Phase 1: Desk review.** At the start of the assignment, the International Specialist with support of national gender expertise (local organization/firm or consultant) will undertake a desk review of policy and project documents and thematic reports related to the targeted agricultural value chains (including general information on gender in agriculture/agribusiness, gender analysis of agricultural value chains, gender issues related to access to productive resources such as land, credit,

agricultural inputs, extension/technology, etc. in Myanmar). This should build on, and complement the desk review of the TRTA value chain research and TRTA gender analysis.

- (ii) **Phase 2: Assignment work plan.** Based on the findings from the desk review and in line with the requirements of the TOR, the Specialist will elaborate an assignment work plan (around 5 pages) which will be submitted to the project executing agency for endorsement. It will present the initial findings from the desk review, and will identify gaps in information which will need to be filled as part of the assignment. The work plan will describe the proposed approach and methodology that will be applied for undertaking the gender analysis of the targeted agricultural value chains, and will specify the time frame allocated for each stage of work. It will also detail the linkage to the TRTA value chain research and gender analysis, the involvement of project stakeholders and key gender actors and informants. The proposed approach and methodology will contain information on a tentative selection of producers, processors, enterprise groups, traders and other key actors such as input suppliers and service providers to participate in the gender analysis of the targeted value chains of the project. The work plan will also include a draft outline of the final report as well as drafts of research instruments. Finally, the work plan should outline capacity development opportunities to ensure the sustainability of value chain analysis within DOP and DOA and the Gender Focal Points.
- (iii) **Phase 3: Fieldwork related to value chain gender analysis.** The international specialist, with support of national gender expertise and in close collaboration with the DOP and DOA/gender focal points, will conduct the gender analysis of each of the targeted value chains using both quantitative surveys as well as participatory methods such as:
 - focus group discussions with female and male actors along the different segments of the value chains (separate and/or mixed);
 - key informant interviews; and
 - implementation of other research methods as identified in the specialist's methodology proposal, meetings with key actors in addition to producers such as collectors, traders, processors, input suppliers, service providers (finance, transport, service, equipment, crop insurance, etc.), government institutions and units such as DOP, DOA, and relevant NGOs, and others.
- (iv) **Phase 4: Draft report.** After the field work, the Specialist will prepare a draft report in English presenting the major findings and providing recommendations. The report will include:
 1. analytical framework and methodological approach, and set of tools and research instruments such as guides that can be used in future value chain gender analysis by the EA;
 2. gender analysis of each of the targeted crop value chains, including findings about gender specific opportunities and constraints found along the value chains;
 3. clear set of recommendations for including gender in the agribusiness policies that will be formulated under the project (a 5-page policy brief will be developed);
 4. clear set of recommendations for ensuring gender responsive agribusiness programming and planning; and
 5. The specialist will also present major findings and recommendations during validation workshops to be organized at local and national levels, and solicit

comments from relevant stakeholders. S/he will ensure all comments on the draft report will be integrated in the final report.

- (v) **Phase 5: Final report.** The specialist will prepare a final report in English with the above mentioned (under iv) content, which incorporates the feed-back from the EA and relevant stakeholders.

H. Specialized Support Services in Gender (local; equivalent to national, 30 person-months, intermittent)⁵²

37. **Minimum qualifications.** Strong track record of working on gender equality in Myanmar and more particularly solid background in gender related work in the context of agriculture and rural development. Experience working on a multilateral development project. A strong and collaborative relationship with MOALI and DSW will be key to facilitating the implementation and monitoring of the project gender action plan.

1. Objectives and Scope of Work

38. The service provider will be responsible to provide overall guidance and technical advice to the EA/IAs in relation to implementation of the project gender action plan and to ensure effective gender mainstreaming in the project and achievement of the intended gender equality results.

39. The services will be provided on an intermittent basis over the entire project implementation period, with assigned gender expert(s) dedicated to the project. The following tasks will be carried out:

- (i) Provide technical advice related to the different aspects of the project from the social development and gender perspectives and based on the gender analysis of the agricultural value chains (to be conducted at project inception) to ensure women and men beneficiaries leverage full impact of the project's activities.
- (ii) Review and develop detailed baseline and targets for overall gender action plan and poverty reduction indicators.
- (iii) Review the project gender action plan (included in the PAM) and specifically working with the MOALI and DSW Gender Focal Points and the project communities, provide overall leadership, guidance and technical advice with regards to implementing, regularly monitoring and reporting on the gender action plan (quarterly to ADB, using the template in Appendix 3). Refer to the ADB gender tip sheets for gender action plan implementation, monitoring and reporting. Coordinate with the MOALI to ensure alignment with and support the operationalization of the NSPAW (especially the livelihoods and participation areas) and Myanmar Agricultural Development Strategy 2016.
- (iv) Provide strong technical support by leading the following activities: (i) the capacity-building activities for the MOALI gender focal points (in close collaboration with DSW), and other key departments in MOALI involved in the project in gender analysis and mainstreaming and gender requirements for the project; (ii) support, coordinate, review and provide feed-back on the gender analysis of the targeted

⁵² A provisional amount of \$112,000 (inclusive of contingencies) is allocated as part of the project budget under provisional sums for procuring specialized support services in gender. This is the equivalent to 30 person-months of a national gender consultant (who would have the same TOR). Nevertheless, the option of hiring a specialized firm or local organization with strong experience in gender at the community level/engaging women in rural development to support the project gender action plan implementation, monitoring and reporting must also be considered, and the approach considered the most suitable and sustainable should be adopted.

value chains and in the agricultural sector – more particularly work with the International Value Chain Gender Specialist for the desk review, identifying key actors along the value chains and key informants for the field research, organise and facilitate all field research related activities and validation workshops, take detailed notes during the field work, translate from Myanmar to English and English to Myanmar, and other activities as needed; (iii) provide advice to MOALI and the agribusiness policy unit on key recommendations from the gender analysis of the targeted value chains for inclusion in the agri-business policies; (iv) capacity-building activities in gender equality in climate-friendly agribusiness VCs (based on gender analysis in VCs report) for relevant project stakeholders.

- (v) Work closely with the M&E specialist to ensure that the gender indicators and targets included in the DMF and the gender action plan, as well as indicators to measure poverty status changes over time are included in the PPMS for the project and build capacity to collect and document the relevant quantitative and qualitative data.
- (vi) Assist the project consultants to design and help manage the implementation of additional socio-economic surveys as appropriate and which are relevant to the subprojects in the target areas with data disaggregated by sex, ethnicity and income, including gender, poverty and community development assessments.
- (vii) Coordinate with and provide technical inputs to the project safeguard specialists regarding the livelihood and social development components, and advising on a training needs assessment of impacted households.
- (viii) Ensure that social development and gender issues are accurately covered at all phases of the project; ensure poor and women's livelihood needs are regularly assessed and addressed.
- (ix) Prepare and conduct before-and-after surveys to assess project gender impacts.
- (x) Support and provide technical advice at the start of and during project implementation on any other matters in relation to gender action plan implementation, monitoring and reporting as and when required.
- (xi) Prepare a Gender Appendix to the Project Completion Report summarizing major achievements regarding the intended gender equality results and reporting achievements on every activity and target included in the gender action plan. Refer to the ADB Tip Sheet on reporting gender results at project completion.
- (xii) Facilitate knowledge sharing on social development and gender related issues, through partner forums, web pages and reports and including lessons learned/ best practice from Myanmar or elsewhere.

2. Institutional Arrangements

40. The service provider will report to the PMU Director. The PMU will support the selected local firm/consultant in undertaking its responsibilities and organizing field work when needed, especially related to (i) the preparation of required social and gender analysis appendices of subproject feasibility studies, (ii) gender action plan implementation, monitoring and reporting (iii) and capacity-building activities. The service provider will liaise with the gender specialist at the ADB RM if needed.

3. Reporting

41. The service provider will support the preparation of reports and documents following Government of Myanmar and ADB rules and guidelines which will include:

- (i) Social and Gender analysis appendices of feasibility studies for subproject preparation;

- (ii) Progress reports at least semi-annually on gender action plan implementation using the template in Appendix 3; and
- (iii) Any other social development study reports as required and requested by MOA.

I. Social Safeguards Specialist (international, 2 person-months and national, 10 person-months)

42. **Minimum qualifications.** Relevant degree, e.g., sociology; experience in rural and community development work; experience working on international development projects, including the preparation of land acquisition and resettlement plans and indigenous peoples/ethnic minority development plans, preferably on ADB-funded projects; experience working on social safeguards on development projects in Southeast Asia; excellent English speaking and writing skills.

43. The objective of the position is to provide guidance in screening subprojects, conducting feasibility studies, preparing land acquisition and resettlement plans (LARP) and indigenous peoples/ethnic minority development plans (IPP), according to the ADB SPS (2009) and the land acquisition and resettlement framework and IPP framework established for the project.

The scope of work includes:

- (i) Provide safeguard concept and monitoring training to executing and implementation agency staff;
- (ii) Assist in establishing M&E reporting for social safeguard indicators;
- (iii) Monitor implementation of the subproject LARPs and IPPs;
- (iv) The social safeguards expert will be responsible to the PIC international team leader and will work closely with the PIC engineers, Social Development and Gender Specialists, and the staff of the implementing agencies at the national, regional, district, and township levels;
- (v) Assist and direct community consultations as per the LARF to identify land acquisition needs for subprojects identified during implementation;
- (vi) Lead and provide guidance in conducting and reporting subproject social safeguard feasibility studies and ensure subproject feasibility study procedures and approval processes are being applied in accordance with the LARF;
- (vii) Prepare LARP and IPP where required;
- (viii) Review feasibility study documentation to ensure it provides details of all land acquired from each household in accordance with ADB SPS (2009) and the CFAVC LARF;
- (ix) Ensure land acquisition agreements are duly signed by husband and wife and witnessed by village and commune authorities;
- (x) Review all subprojects to ensure that no land has been acquired through coercion, compensation monies paid, and that land purchased or acquired by cooperatives was done so under free private commercial transparent transactions;
- (xi) Identify impacts on ethnic minority households and communities and where identified, prepare an IPP as recommended under the IPPF and also establish monitoring procedures;
- (xii) Prepare training guidelines for preparation of a resettlement plan, and indigenous peoples' plan in accordance with Myanmar Government Laws and Regulations and ADB's SPS and the LARF and IPPF prepared under the PPTA;
- (xiii) Provide inputs to the monitoring and reporting systems and provide information required for third party audit of land acquisition and voluntary donation cases; and
- (xiv) Help the PMU to set-up a combined social safeguards and environment grievance redress system.

J. Environmental Safeguards Specialist (international, 6 person-months and national, 20 person-months)

44. **Minimum qualifications.** Relevant degree, e.g., in environmental management or natural resource management; experience on international development projects, preferably ADB-funded projects, wherein environmental management plans (EMPs), initial environmental examinations (IEEs), and environmental assessment and review framework (EARFs) were completed; experience working on environmental safeguards and/or implementing climate change adaptation and disaster risk reduction projects on development projects in Southeast Asia; excellent English speaking and writing skills

45. The objective of the position will be to develop plans, procedures, and stakeholder buy-ins in all aspects of environmental management, monitoring and impact assessment in the implementation of the project EARF and the IEEs of the subprojects.

The scope of work includes:

- (i) assisting the Project Management Unit (PMU), the PMU Safeguards and Monitoring and Evaluation Officers, and other relevant personnel and agencies in the implementation of the Project's EARF and the subproject IEEs. More specifically:
 - to ensure that the steps of the EARF covering environmental screening and impact assessment are followed by the PMU
 - to deliver training (i) in EARF procedures for screening and assessing environmental impact by way of the IEE, and (ii) in record-keeping and reporting
 - to establish and publicize the grievance redress mechanism for subprojects, ensuring that publicity is appropriate to the scale and complexity of the subproject and includes, as a minimum, the disclosure of all contact persons for lodging complaints
- (ii) mapping out capacity needs of policymakers and other stakeholders in terms of (i) climate data needs, (ii) vulnerability and impact assessments, (iii) subnational and gender mainstreaming of climate resilience at policy and operational levels, (iv) conducting feasibility studies of gender-responsive adaptation projects, (v) knowledge management, and (vi) appropriate M&E;
- (iii) advising project staff, IAs, and relevant government departments on knowledge management on climate change adaptation and disaster risk reduction;
- (iv) preparing training materials, guidelines and sector manuals and conduct training programs and workshops for integrating (i) adaptation into subnational planning and development, (ii) gender considerations into adaptation investments, and (ii) adaptation indicators into national, sectoral and project M&E systems;
- (v) assisting the PMU in prepare quarterly and semi-annual project monitoring progress reports for submission to ADB; and
- (vi) Help the PMU to set-up a combined social safeguards and environment grievance redress system.

K. M&E Specialist (international, 6 person-months and national, 20 person-months)

46. **Minimum qualifications.** Relevant degree, e.g. in economics; experience on international development projects, preferably ADB-funded projects, in developing and maintaining M&E systems (PPMS), and planning and overseeing baseline data collection, and

impact surveys, particularly on agricultural development projects; excellent English speaking and writing skills. Knowledge of GIS would be an advantage.

47. The scope of work includes:

- (i) develop the project M&E system (PPMS) including necessary reporting formats (unless already done by the start-up consultants);
- (ii) train the PMU, RPIUs and TPIUs in the implementation of the PPMS;
- (iii) based on data from the M&E system showing the location of subprojects create maps showing where subprojects are located and the status of these;
- (iv) plan (including preparation of TORs for an external survey firm) and oversee baseline data collection, and impact surveys;
- (v) assist the PMU in the production of progress reports for submission to MOALI, PSC and ADB, and work with safeguards specialists to ensure that safeguard monitoring reports are produced, including monitoring against the gender action plan.

48. **Reporting Requirements and Time Schedule for Deliverables.** The project implementation period of the consultant services is 7 years (tentatively 1 January 2019 - 31 December 2025). Deliverables include:

- (i) **Inception Report** – within 3 months of mobilization – presenting approach to tasks and reporting, with details of how each task will be performed, and identifying what resources will or may be required.
- (ii) **Quarterly Progress Reports (QPRs)** – summarizes the highlights per quarter, the activities undertaken and a summary of disbursements; physical and financial progress of the project; achievement of targets for outputs and inputs defined in DMF, to be submitted within 14 working days of the first month of the succeeding quarter.
- (iii) **Project Performance Monitoring Reports (PPMS)** – shall be submitted every 6 months, highlighting the performance based on the DMF targets.
- (iv) **Borrower's Project Completion Report** – within 6 months from physical completion of the project.
- (v) **Safeguard monitoring reports** – due as required in the project LARFs, EARFs and EMDF (linked documents).
- (vi) **Gender Action Plan** - due at least semi-annually, as required in the gender action plan linked document.

49. **Transfer of Knowledge:** The PIC will take every opportunity to work alongside government counterpart staff on a day-to-day basis, and provide on-the-job training and conduct workshops, as necessary, for government staff and project stakeholders on project management, financial management, M&E and safeguard issues, as well as technical subjects within the scope of PIC services, as required.

50. **Client's Input and Counterpart Personnel.** Services, facilities and property to be made available to the consultants by the client:

- (i) All available project reports and data including feasibility reports and detailed engineering design for the three representative subprojects;
- (ii) Office space with furniture and office equipment, plus internet access;
- (iii) Vehicles;
- (iv) Counterpart support staff in PMU and PIU.

III. CAPACITY BUILDING AND CSA TRAINING

51. **Objective of the assignment.** The Capacity Building and Climate Smart Agriculture Consultants will provide technical capacity building and advisory services to the EA and IA in the implementation of the project. The capacity building/CSA consultants will work in close coordination with the project implementation consultants (PIC), contracted under a separate package, who will concentrate principally on support to project management, procurement, safeguard compliance and M&E.

A. Laboratory, Quality and Safety Training Specialist (international, 4 person-months)

52. Qualifications:

- Relevant degree, e.g., in chemistry, biotechnology, food technology;
- Experience in the rehabilitation of food safety laboratories (in particular in the equipping of such laboratories);
- Experience in supporting laboratories to become ISO17025;
- Experience of supporting laboratories in Southeast Asia is an advantage; and
- Excellent English speaking and writing skills.

53. The scope of work includes:

- Assist the IAs in upgrading the pesticide, food safety, and commodity testing infrastructure (equipment and instrumentation) of three National Government laboratories, the MOALI – Plant Protection Division (PPD) Pesticide Testing Laboratory (PTL), the MOALI - PPD Food Safety Testing Lab (FSTLAB), and the Ministry of Commerce (MOC) – Dept of Consumer Affairs (CA) Commodity Testing & Quality Management Laboratory (CTQM). Specific tasks will include assisting in the selection of equipment (reviewing the work of the PPTA recommendations) and preparation of specifications for tender documents.
- Once equipment arrives, provide training to laboratory staff in the use of such equipment;
- Work with the laboratories to develop a plan to become self-sustainable. i.e. once the increased testing capability is in place, each laboratory will need to adjust its fees to be commensurate with the value of the test run;
- Prepare a plan for the laboratory to become ISO17025 accredited, noting that it is not expected that the laboratory will become accredited during the consultant's time on the project;
- Support the DOA and MyanTrade in developing specifications for the purchase of rapid reactions kits (to test the quality of produce being stored in private farms) and provide training to recipients in the use of such kits. Recipients will be selected by DOA and MyanTrade according to selection criteria included in the PAM. The consultant may be requested to assist with the selection process.

B. Farm Mechanization Specialist (international, 3 person-months and national, 6 person-months)

54. Minimum Qualification Requirements

- Degree in agriculture or agriculture engineering, with at least 10 years of relevant working experience (for the international in emerging economies);
- Experience in agriculture mechanization for climate smart agriculture technologies;

- Experience in the planning and implementation of agriculture mechanization training programs

55. **Scope of Work.** The specialist will support the Ministry of Agriculture, Livestock and Irrigation (MOALI) Agriculture Mechanization Department (AMD), Department of Rural Development (DRD) and DOA-Extension Division (ED) to promote agriculture mechanization in collaboration with private sector companies. This will include the development and implementation of workshops and demonstrations on mechanization and training on machinery operation and repair. Participants will include private dealers, service providers, mechanics, repair workshops, MOALI staff, and farmers.

56. **Detailed Tasks.** The responsibilities will include:

- The identification of machinery suitable for (a) smallholder farmers, particularly for women-headed households; (b) machinery suitable for the pulse-based farming systems; and (c) machinery supportive of climate smart interventions (direct seeding, deep placement of fertilizer, laser leveling, water saving irrigation technologies, etc.);
- The development of training material on best practice mechanization technologies and practices applicable to crop varieties and soil types in the Central Dry Zone (CDZ);
- Training of trainers from the AMD on mechanization best practice;
- Assist AMD to develop with private sector and DOA-ED / DRD mechanization demonstrations on lead farmers fields;
- Assist AMD to assess the demand for machinery operation and repair skills in the target area and organize training with private sector and/or the AMD Meikthila Training Centre.
- Ensure that the gender action plan recommendations are being implemented by the IA, for the farm mechanization activities

C. Agribusiness Policy and PPP Specialists (international, 9 person-months and national, 35 person-months)

57. **Qualifications:**

- Relevant degree, e.g., in agricultural policy, agricultural economics, or agricultural marketing;
- Experience in agricultural policy formulation, research and analysis, and advocacy work in development projects in developing countries;
- Experience working in developing an agriculture/agribusiness policy framework and in carrying out policy development in South or Southeast Asian countries; and
- Excellent English speaking and writing skills .

58. The objective of this position is help the newly formed agribusiness policy unit to develop an agribusiness policy framework for MOALI and help formulate agribusiness policy priorities.

59. **The scope of work includes:**

- Help (i) in developing an agribusiness policy framework, and (ii) in formulating climate-smart, agribusiness policy priorities and a workplan which includes, but is not limited to, the policy topics described in the PAM.
- Guide the Policy Unit Director and Research Officers in formulating agribusiness policies that have a direct impact on creating an enabling environment for agribusiness stakeholders in the Project's value chains
- Recommend agriculture policy training programs that are available regionally

- Train the Director and Research Officers in various policy tools for analyzing policy options and potential outcomes, using priority policy topics, such as, the expected impact from registering Shwebo Paw San Rice as a Geographic Indication
- Assist the Policy Unit in advocating agribusiness policies across departments in the MOALI, across ministries (MOALI, MOC, MOI), and among the stakeholders along the value chains
- Assist the Policy Unit in preparing “Policy Briefs” disseminated among public and private stakeholders to inform them of specific attributes of the agribusiness policy reforms taking place and in getting feedback on policies that are in the formative stages.
- With support from the gender specialists from the PIC firm, ensure that gender is mainstreamed into policies

D. Agricultural quality, safety and standards specialists (international, 6 person-months and national, 12 person-months)

60. Qualifications:

- Experience in developing agricultural commodity standards and applying them within the agricultural sector
- Applied knowledge of the role of standards in trade and certification systems, with specific knowledge of the ASEAN AEC trade frameworks and the current situation in the GMS
- Excellent English speaking and writing skills
- Relevant degree

61. The scope of work includes:

- Together with the policy unit, agribusiness policy specialists, PIC Team Leader, and the MOC, prepare a workplan for developing various product quality, food safety, manufacturing, and other standards (at farmgate, post-storage, post-processing, and pre-export) and/or codes of practice along the value chains of the targeted agricultural commodities;
- Assist the Technical Committee of the National Standards Committee and the MOC in developing appropriate standards for the project's targeted commodities, including setting specifications and minimum requirements for certification, labelling and marking;
- Working closely with the climate smart agribusiness specialist and the IA, develop food safety management systems appropriate for the milling of rice and the processing of pulses, beans, and oilseeds by
 - integrating Good Manufacturing Practices and HACCP into the management systems
 - aligning HACCP with ISO 22000 Food Safety Management into the systems
- Conduct workshops with direct and indirect stakeholders of the targeted value chains for presentation and discussion of drafted standards, both Government regulated as well as voluntary standards;
- Advocate for the approval of the drafted standards that come under Government regulation;
- Work closely with the IA and the direct stakeholders in getting industrial support for the drafted voluntary standards; and
- Develop an implementation plan for integrating the various standards and food safety management systems into the value chain activities.

E. Geographic Indication, Branding & Marketing Specialist (international, 4 person-months and national, 9 person-months)

62. Qualifications:

- Experience in developing brands for processed food and marketing high-valued agro-processed products in the private sector
- Experience working in high-valued agricultural commodity marketing in South and/or Southeast Asia
- Excellent English speaking and writing skills
- Relevant degree, e.g. in marketing, business management, or agricultural economics with a specialization in agricultural commodity marketing

63. The objectives of the position are (i) to raise awareness of processing plants in product branding required for high end domestic markets, such as large supermarket chains, and international markets that demand high quality products, and (ii) to develop and promote the Shwebo Paw San rice after being registered as a Geographic Indication.

64. The scope of work includes:

- Work with the Intellectual Property Division of the Science and Technology Department of the Ministry of Education in developing and promoting the Shwebo Paw San rice that is registered as a geographic indication (GI);
- Work with the Myanmar Trade Promotion Organization (MTPO) of the MOC in providing advise to companies on branding and deciding if there is a need for product brands, in addition to that for Shwebo Paw San rice; and
- Recommend participation for project supported processors in regional trade shows.

F. Green finance capacity building specialists (international, 5 person-months and national, 9 person-months)

65. Qualifications:

- Experience working in a private bank managing loans for agribusiness investment
- Experience of climate finance and/or climate-friendly financial products
- Excellent English speaking and writing skills
- Relevant degree e.g. in banking, finance, or agricultural economics with courses in finance

66. The scope of work includes:

- Identify financial institutions that have an interested in developing their agricultural portfolios and receiving project assistance;
- Develop environmental and climate screening criteria and tools to guide FIs' lending activities;
- Build capacity of FIs for evaluating loans against these environmental and climate risk screening criteria; and
- Help integrate mitigation and adaptation opportunities into FIs' lending activities.

G. Market and credit information specialist (international, 6 person-months and national, 18 person-months)

67. Minimum Qualification Requirements

- Relevant degree, e.g., master's in information systems management, land management or geography;
- At least 7 years' experience in market information systems, including mobile based systems.

68. Scope of Work. The specialist will support, DOP, in close collaboration with DOA, to facilitate the linkage of existing market price and credit information networks between local markets and traders, with the target beneficiaries.

69. Detailed Tasks. The specialist will assist DOP to:

- Identify existing information systems that can be built on and expanded. E.g. e.g. Greenway and Shwe Thee Nha, and DOA's call center which may also be used to provide such information to farmers and agribusinesses.
- Help to expand such systems so that 100% of the project beneficiaries are using the market information network to help negotiate markets and market prices for their crops and products.

H. Land Use, GIS and Agro-Ecological Zoning Specialist (international, 6 person-months and national, 18 person-months)

70. Minimum Qualification Requirements

- Master's in information systems management, land management or geography
- At least 7 years' experience in the development and application of GIS-based planning and management systems in emerging economies

71. Scope of Work. The specialist will assist the Department of Agriculture Land Management and Statistics (DALMS), in partnership with the Land Use Division of the Department of Agriculture (DOA), to develop a fit for purpose GIS database system covering, *inter alia*, land resource administrative types, land allocation, related infrastructure (water, roads, settlements, etc.), groundwater information and the administrative classification of farmland.

72. Detailed Tasks. The specialist will assist DALMS to:

- Specify and procure 24,000 km² of Rapid Eye 5m resolution satellite imagery;
- Develop participatory land use maps for the 12 project districts;
- Compile a fit for purpose GIS database;
- Produce at least 6 Township management plans that identify and program land administration interventions at township level ((identification of available unused and suitable VFV land and state-owned land for possible re-allocation; needs for further land use certification and tenure regularization – grazing lands, fishponds; de-gazetting of occupied reserved forests; establishment of community forests; etc.);
- Assist in the development of related staff training products.

I. Rural Land Planning and Administration Specialist (international, 6 person-months and national, 8 person-months)

73. Minimum Qualification Requirements

- Masters in land management planning or geography
- At least 7 years' experience in the development and application of land planning and management systems in emerging economies

74. Scope of Work. The specialist will assist the Department of Agriculture Land Management and Statistics (DALMS), in partnership with the Land Use Division of the Department of Agriculture (DOA), to develop a planning tool to select up to 200 villages clustered in village tracts to deliver inputs and facilitation services, covering both locations for irrigation development in the alluvial plains, and upland areas for improved rainfed agriculture and livestock production.

75. Detailed Tasks. The specialist will assist DALMS to:

- Produce at least 6 township land management plans to: (a) Identify and program land administration interventions at township level (identification of available unused and suitable VFW land and state-owned land for possible re-allocation; needs for further land use certification and tenure regularization – grazing lands, fishponds; de-gasketing of occupied reserved forests; establishment of community forests; etc.); and (b) Select up to three Village Tracts for each township for project specific land administrative interventions (institutional capacity building for village development committees and Village Tract Administrative Body of Farmland, village planning, land tenure regularization, capacity building).
- Establishing regional/township crop suitability for on and off-season production for a selection of relevant crops under different inputs scenarios.
- Build capacity to validate, strategize and implement participatory township land management plans produced at the national level.
- Assist in the development of related staff training products.

J. Land Administration Services Specialist (international, 3 person-months and national, 8 person-months)

76. Minimum Qualification Requirements

- Masters in land management planning or geography;
- At least 10 years' experience in training in the development and application land planning and management systems and GIS information systems in emerging economies.

77. Scope of Work. The specialist will assist the Department of Agriculture Land Management and Statistics (DALMS), in partnership with the Land Use Division of the Department of Agriculture (DoA), to develop a capacity building program to support township land administrations staff, targeting DALMS and the General Administrative Department (GAD), including the design of a model office at the township level to put into place more client friendly service delivery.

78. Detailed Tasks. The specialist will assist DALMS to develop staff training programs covering:

- Training in the use of modern, but cost effective and simple techniques to handle routine and new land administration tasks (land use titling, crop statistics, securing

- tenure over communal village lands and woodlots; reclaiming allocated but unused VFV land for re-allocation to the poor); land use planning; and
- land administration systems, participatory land use planning, work ethics, and relationship with clients, land dispute management; work planning, report preparation, etc.

K. Capacity Building Coordinator (national, 60 person-months)

79. Qualifications:

- Relevant degree e.g. agriculture or agronomy
- Experience in project management and co-ordination. Specific experience on donor-funded projects will be an advantage
- At least 7 years' experience in agricultural development
- At least 3 years' experience in undertaking capacity building activities
- Excellent English speaking and writing skills

80. The objective of the position is principally to organize the capacity building activities of the project in co-ordination with the team and IAs. The scope of work includes:

- Prepare activity and personnel schedules for the team, and integrate into the overall work plan in coordination with the PIC team leader and the FAO chief technical adviser (for a separate GAFSP funded package);
- Coordinate the team's inputs as per the work plan;
- Organize capacity building activities in coordination with other team members and IAs;
- Undertake capacity building across various project components, as per gaps in the training provided by others (e.g. on climate smart agriculture), and where complementary to other experts' expertise. Prepare joint training activities as required with the FAO team and PIC team;
- Ensure that the gender action plan recommendations are being implemented by the IA and team, in coordination with the PIC team; and
- Prepare an inception report, quarterly progress reports and final report.

L. Seed Production & Certification Specialist (national, 7 person-months)

81. Qualifications:

- Experience working in the production of certified seed of rice, pulses, and/or oilseeds in the private or public sector
- Experience in applying climate smart agricultural practices in seed varietal selection and multiplication
- Experience in cleaning, drying, and storing certified seed in modern storage facilities, with experience in storing seeds in Hermetic bags preferred
- Good communication and organizational development skills; experience in organizing and conducting TOT programs and on-farm seed demonstrations
- Relevant degree, e.g., in agronomy with specialization preferably in crop breeding, seed multiplication
- Excellent English speaking and writing skills

82. The objective of the position is to build the capacity of DOA seed farms to produce high-quality varieties of climate-resilient seed varieties of rice, pulses, bean, and sesame. The scope of work includes:

- Work in close liaison with the FAO seed production specialist (not part of this project) who will be supporting farm-level production of seeds, purchased from the DOA seed farms
- Build the capacity of DOA seed farms to produce high quality seeds. Work together with other specialists to plan improved infrastructure and equipment for the farms
- As required, support DOA and DRD in the introduction of new climate-resilient varieties
- Help facilitate an improved collaboration between DOA seed farms and the private sector to assess the most demanded varieties of pulses and oil seeds with good qualities in terms of climate change resilience, pest and disease resistance, nutritional qualities, good market demand;
- Work with DOA to liaise with DAR to plan availability and production of breeder, foundation and registered seeds, and undertake field inspections;
- Ensure that the gender action plan recommendations are being implemented by the IA, for seed production activities
- Support business plan development for each DOA seed farm so that they become financially sustainable soon.

M. Water Management Specialist (national, 36 person-months)

83. Qualifications:

- Experience in building the capacity of farmers in on-farm water management
- Relevant degree e.g. in irrigation or water management
- Excellent English speaking and writing skills

84. The objective of the position is to build the capacity of farmers, and farmer's groups (in particular water user groups) on improved on-farm water management techniques.

85. The scope of work includes:

- Assist the IWUMD in developing an organized management system, i.e., water users groups, for managing and maintaining the improved irrigation infrastructure
- Together with the irrigation supervision engineer from the PIC team, provide capacity building with the IWUMD to the water users groups managing and maintaining the irrigation systems
- Support IWUMD in providing capacity building to farmers in target irrigation schemes, as well as those farmers receiving tube wells (and drip irrigation) under the project, on improved on-farm water management practices such as optimal crop-specific water application methods, land leveling, soil amelioration, drainage, etc.
- Ensure that the gender action plan recommendations are being implemented by the IA, e.g., to ensure female representation in water user groups

N. Post-harvest Handling & Storage Specialist (national, 11 person-months)

86. Qualifications:

- Experience in post-harvest handling and storage on long-term implementation of development projects
- Relevant degree, e.g., in agricultural engineering or civil engineering with a specialization in grain post-harvest handling and storage
- Excellent English speaking and writing skills

87. The objective of the position is to improve the cleaning, drying, and storage practices of the DOA Seed Farms, the private seed growers, and the farmer groups by providing technical assistance and training in post-harvest handling and storage of certified seed and grain.

88. The scope of work includes:

- Working closely with the DOA (IA), DAR, the MOC (IA), the PMU Project Director, and the PIC International Team Leader and national Engineer (for the DOA seed farms), the National Seed Production and Certification Specialist, and others such as IRRI, ACIAR...etc integrate through workplans, the appropriate cleaning, drying, and storage facilities into the subprojects (of the DOA Seed Farms, etc) in order to effectively train the equipment and storage operators in the codes of practice, including GMP, GHP, and HACCP, in the operations
- Liaise with other development initiatives engaged in harvest and post-harvest operations such as reduction of shattering losses, separation losses, scattering losses and threshing losses;
- Identify, collect and document best practices of harvest and post-harvest operations with a special focus but not limited to pulses, oil-seeds and rice;
- In collaboration with DOA-ED develop appropriate extension messages, including mobile phone based app-content, for use with FFS, lead farmers, and seed farmer groups;
- Identify useful machinery, equipment and operating procedures to minimize harvest and post-harvest losses, including improved storage operations.
- Facilitate procurement of needed equipment to run demonstrations and trials on improved harvest and post-harvest operations.
- Training and providing technical assistance to the DOA Seed Farms, the private seed growers and storage managers, the farmer groups, and processors in appropriate cleaning, drying, and storage methods in the TOT, FFS, and group training venues
- Working with the PMU monitoring and evaluation staff and the regional representatives of the IAs in training them to recognize what needs to be monitored to effectively evaluate the impact of adopting the codes of practice
- Ensure that the gender action plan recommendations are being implemented by the IA, for the post-harvest support activities

O. Farm Mechanization Business Development Specialist (national, 6 person-months)

89. Minimum qualification requirements

- Degree in agriculture economics or business management with at least 10 years of relevant working experience in Myanmar
- Extensive experience in agriculture mechanization in Myanmar

90. Scope of Work. The specialist will help promote agriculture mechanization in collaboration with private sector companies. The specialist will also work with AMD Agriculture Mechanization Services in the CDZ to assist them to prepare business plans with a view to their eventual privatization, as proposed in the Agricultural Development Strategy (ADS).

91. Detailed Tasks. The responsibilities will include:

- Support private sector agriculture mechanization contractors with applications for machinery procurement under the Hire Purchase Financing Program supported by the LIFT;
- Work with selected AMD Agriculture Mechanization Stations to develop business plans with a view to their sustainable, profitable operation and eventual privatization.

P. Climate Smart Agribusiness Specialist (national, 30 person-months)

92. Qualifications:

- Experience in the agricultural processing sector in Myanmar, in the target crops. Previous practical experience in the private sector is preferred.
- Knowledge and experience of applying Good Manufacturing Practice (GMP), Hood Hygienic Practice (GHP) and HACCP
- Excellent English speaking and writing skills
- Relevant degree

93. The scope of work includes:

- Assist the IAs in designing and implementing the capacity building program for agribusinesses in particular, in improving product quality by practicing good manufacturing practices (GMP) while incorporating climate smart practices (such as improved energy and water use efficiency).
- Identify existing documentation of best practices for improving product quality along the downstream value chain (after the farmgate). This includes in food safety, product quality assurance, GMP, GHP, HACCP, product branding and market promotion. This will be done in parallel with standards development activities under Output 3 carried out by the policy unit with support from the agricultural quality, safety and standards specialists;
- Upgrade guidelines in a participatory manner, working together with the policy unit with support from the agricultural quality, safety and standards specialists;
- Identify external training providers for implementing a training of trainers (ToT) approach;
- Elaborate contract farming models (with the agribusiness policy unit in MOALI) and in coordination with the PIC team leader;
- Prepare and help implement capacity building modules so that standards (including GMP and HACCP) developed by the policy unit are adopted by agri-processors and traders with appropriate backward linkages to farmers through appropriate contracting farming models so that agri-processors and traders can also build the capacity of farmers to improve farm-gate standards; and
- Ensure that the gender action plan recommendations are being implemented by the IA, for the agribusiness support activities.

IV. FEASIBILITY STUDIES AND DETAILED DESIGN CONSULTANTS

A. Objective of the assignment

94. The Feasibility Studies and Detailed Design Consultants will prepare designs for:
- (i) The rehabilitation/upgrading of infrastructure on ten DOA seed farms (noting that one has already been designed during project preparation);
 - (ii) The rehabilitation/upgrading of 130 km of tertiary canals, identified by IWUMD as per selection criteria in the PAM (noting that one scheme has already been designed by the PPTA consultants);
 - (iii) The rehabilitation of 15 community-owned reservoirs used for irrigating approximately 1000 hectares of land, identified by IWUMD as per selection criteria in the PAM.
 - (iv) The rehabilitation/upgrading of 300 km single-track farm feeder roads, identified by DRD as per selection criteria in the PAM, into all-weather roads (not asphalt);

B. Scope of work

95. Rehabilitation/upgrading of infrastructure on ten DOA seed farms, including:
- (i) Visit and survey the prescribed sites for the rehabilitating and upgrading of DOA seed farm infrastructure together with DOA staff. Such infrastructure could include roads, irrigation canals and buildings.
 - (ii) Undertake topographical and other surveys as required to undertake the work.
 - (iii) Prepare feasibility studies of the chosen subproject sites along with the detailed engineering designs that accompany each of these sites. This should include drawings, BOQs and specifications so that tender documents can be produced.
 - (iv) Present the feasibility studies and detailed designs to the DOA, and the PIC national engineer and get their feedback and approval.
 - (v) Once approved, submit the feasibility studies and the detailed designs to the PMU Project Director.
 - (vi) Complete any modifications to the feasibility studies and detailed designs and re-submit.
96. Rehabilitation/upgrading of 130 km of tertiary canals and 15 community-owned reservoirs, identified by IWUMD as per selection criteria in the PAM, including:
- Visit and survey the prescribed sites for the irrigation improvements (rehabilitating minor canals and renovating small reservoirs) together with the local IWUMD engineers.
 - Undertake topographical and other surveys as required to undertake the work.
 - Prepare feasibility studies of the chosen subproject sites along with the detailed engineering designs that accompany each of these sites. This should include drawings, BOQs and specifications so that tender documents can be produced.
 - Present the feasibility studies and detailed designs to the IWUMD engineers, officials, and the PIC International and National Irrigation Specialists and get their feedback and approval.
 - Once approved, submit the feasibility studies and the detailed designs to the PMU Project Director.
 - Complete any modifications to the feasibility studies and detailed designs and re-submit.

97. Rehabilitation/upgrading of 300 km single-track farm feeder roads, identified by DRD as per selection criteria in the PAM, into all-weather roads (not asphalt):

- Visit and survey the prescribed sites for the repair of the farm feeder roads together with the local DRD road engineers.
- Undertake topographical and other surveys as required to undertake the work.
- Prepare feasibility studies of the chosen subproject sites along with the detailed engineering designs that accompany each of these sites. This should include drawings, BOQs and specifications so that tender documents can be produced.
- Present the feasibility studies and detailed designs to the DRD road engineers, and the PIC international and national road engineers and get their feedback and approval.
- Once approved, submit the feasibility studies and the detailed designs to the PMU Project Director.
- Complete any modifications to the feasibility studies and detailed designs and re-submit.

C. Scope of Work

98. The consultancy firm for the feasibility study and detailed design (FSDD) will assist the project management unit (PMU), executing agency (EA), project management unit, and the project implementation consultants (PIC) in the feasibility and design of subprojects. The key aspects of the consultant's work will be to:

- (i) undertake feasibility studies to determine if the subproject: (i) is pro-poor (i.e. benefits will mainly accrue to poor farming households); (ii) for irrigation projects there is demonstrated water availability in sufficient quantity and quality to ensure the intended benefits of the project can be achieved; (iii) the planned infrastructure works are technically feasible; (iv) has demonstrated commitment from local government authorities; (v) has commitment from cooperatives and or water users to operate and maintain structures post-project and to distribute water and resources in an equitable manner; (vi) is economically feasible (EIRR >12%)
- (ii) prepare detailed engineering designs of the works and tender documents (if the subprojects are approved by Project Steering Committee (PSC))

99. To ensure that the subprojects are designed in a logical and efficient manner, these will be grouped and packaged. The FSDD firm will start feasibility and design work on a package by package basis and will allocate resources as required for these to be completed. Given the time needed to undertake feasibility studies and detailed engineering design for each package, as well as preparing tender documents (approximately six months), packages will likely have to be undertaken one after the other. However, there may be some overlap depending on the speed and resources of the FSDD firm. It is recommended that grouping of packages will be done based on location, as well as total estimated works contract size. Viable subprojects will then be approved by the PSC after submission and following recommendations from PMU. The prioritizing of the subprojects should be agreed upon in consultation with the project implementing units (PIU) and local authorities

100. The detailed engineering design of subprojects will be done in a participatory way with the involvement of the PIUs, local officials, communes, and water users. The FSDD will take into account future project activities and eligibility criteria of the supporting the subprojects during the feasibility work.

101. The contractor needs to determine that the subproject is technically, environmentally, socially and economically feasible. For this to be determined, more detailed field surveys and analysis will be undertaken to determine that the subproject: (i) is pro-poor (i.e. benefits will mainly accrue to poor farming households); (ii) for irrigation projects there is demonstrated water availability in sufficient quantity and quality to ensure the intended benefits of the project can be achieved; (iii) works are technically feasible; (iv) has demonstrated commitment from local government authorities; (v) has commitment from water users to operate and maintain structures post-project and to distribute water and resources in an equitable manner; (vi) is economically feasible (EIRR >12%).

102. For subproject designs, existing design procedure practices under national standards will be used, however, where innovative climate-resilient improvements can be used, FSDD will incorporate such innovations in the design providing sufficient justification for such additional costs, structures or practices can be proven

103. For the topographical surveys (which will be undertaken to the detail required for detailed design), it is recommended that the design contractor uses its own staff or subcontracts a national private firm. The same is true when additional data are required. The FSDD firm is encouraged to involve PMU and PIU staff in the surveys for on-the-job capacity building. For irrigation schemes, hydrological surveys may be required if secondary data does not exist.

104. For rural road rehabilitation subprojects, activities required will include a detailed topographic survey of the full length of the road and preparation of a complete set of road design drawings with required supporting documents, calculations and specifications, and assist in the preparation of the tender documents and contracts for construction of the subproject. The ADB safeguards on environmental impact, land acquisition and DRR must be taken into account. Also, the practicalities of public access and safety must be considered.

105. For estimation of the EIRR, farm budgets will need to be estimated. The methodology used during project preparation for the representative subprojects can be used.

106. Socioeconomic data will be collected on each subproject site. If required, resettlement plans (LARPs) and IEEs/environment management plans will be prepared. These should follow the project Land Acquisition and Resettlement Framework (LARF) and project Environment Assessment and Review Framework (EARF). DDR and IEE for the representative subprojects were prepared in the PPTA stage and can be followed. Due regard will also be given to the Summary Poverty Reduction and Social Strategy.

107. Tender documents should follow standard formats prepared project preparation, unless modifications are required by the PMU.

D. Deliverables

108. For each package the following reports (deliverables) will be prepared:

- A work plan and personnel schedule should be submitted no later than two weeks after mobilization.
- Short monthly reports (no more than 1 page per subproject in a format to be agreed with the PMU)
- A draft feasibility report (for each subproject) should be submitted no later than three months after mobilization. The initial environmental examination (IEE), if required, should

be translated into Myanmar, as should the public disclosure plan (an annex to the Land Acquisition and Resettlement Plan).

- Tender documents for work packages (including detailed design drawings) should be submitted no later than six months after mobilization.

109. The reports will be submitted in electronic copy and hard copy (three copies) to the PMU. The reports must be written in English. The PMU will provide comments to the reports within 30 days. The reports should then be updated by the FSDD firm. In the absence of comments or approval within the set deadline, the reports are deemed to be approved.

110. Once feasibility studies and designs are approved by PSC and ADB,⁵³ the consultants will support PMU to prepare tender documents and contracts for construction of the subprojects

E. Key Personnel

111. **Team Leader/Irrigation Design Engineer (international, 5 person-months).** Will be responsible for overall team coordination, and delivery of quality and timely outputs. S/he will be a qualified engineer (preferably civil engineer) with adequate experience (at least 10 years) in the design of irrigation rehabilitation and upgrading works, the tasks to undertake will be:

- (i) Responsible for overall direction of the consultant team, and coordination and management of inputs;
- (ii) Manage the FSDD team relationships with government, the PMU, ADB and other stakeholders;
- (iii) Identify tasks on the critical path, and ensure that implementation schedules are followed;
- (iv) Take the lead in the feasibility and detailed design of structures, and outsource and specific studies as required (e.g. topographic studies) and
- (v) Take the lead in the preparation of the initial work plan and personnel schedule (including determining resource needs), monthly reports, feasibility study reports and technical sections of the tender documents

112. **Deputy Team Leader/Irrigation Design Engineer (national, 10 person-months).** The deputy team leader/irrigation design engineer will be a qualified engineer (preferably civil engineer) with at least five years in the detailed design of irrigation rehabilitation and upgrading works. S/he should be highly proficient in MS Excel and knowledge and experience in using AutoCAD is preferable. S/he will:

- (i) Prepare plans of the subprojects, showing where selected hydraulic structures are located, including reservoirs, main canals and the positioning of secondary and tertiary canals. The latter may require ground truthing using GPS;
- (ii) Assist the team leader in the feasibility and detailed design of structures (including the preparation of drawings and BoQs), including the supervision of any engineering surveys (e.g. topographic surveys). Undertake field visits as required to gather data and be involved in public disclosure meetings (with the environmental and social safeguards teams);

⁵³ ADB may review the first one or two feasibility studies, and if they are of the quality accepted by ADB, subsequent feasibility studies will follow post review procedures upon request. In any case, ADB will require feasibility study to be delivered in batches.

- (iii) In collaboration with the Agricultural Economist / Agriculturalist, assist in the assessment of the crop water requirement for design and scheme water distribution purposes;
- (vi) In collaboration with the Hydrologist, assist in the preparation of the rating curves at canal headwork levels;
- (iv) Assist in the preparation of the 'Water Requirements and Availability' annex at irrigation scheme level (main canal) of the feasibility reports, including a proposal of water distribution from the main irrigation canal to branching or secondary canals; and
- (v) Provide inputs to reports as required

113. Road Design Engineer (international, 2 person-months; national, 8 person-months). S/he will be a qualified engineer (preferably civil engineer) with adequate experience (at least 10 years) in the design of roads and upgrading works, the tasks to undertake will be:

- (i) Prepare plans of the subprojects and assist the team leader in the feasibility and detailed design of road structures (including the preparation of drawings and BoQs), including the supervision of any engineering surveys.
- (ii) Undertake field visits as required to gather data and be involved in public disclosure meetings (with the environmental and social safeguards teams); and
- (iii) Provide inputs to reports as required

114. AutoCAD Specialists (national, two persons for 6 person-months each): The AutoCAD specialists will be qualified engineers (preferably civil engineers) with over 3 years' experience in the use of AutoCAD, and with experience in the design of rural infrastructure, irrigation rehabilitation and upgrading works, they will:

- (i) Prepare detailed design drawings using AutoCAD, based on detailed designs prepared by the irrigation engineers; and
- (ii) Link the design drawings to the calculation of BoQs.

115. Hydrologists (international, 2 person-months; national, 4 person-months): The hydrologists will have a relevant educational background with at least ten years' experience in hydrology, including in rural infrastructure, irrigation rehabilitation and upgrading design. They should be highly proficient in MS Excel (including the use of pivot tables) and MS Access. They will report to the team leader and will be responsible for:

- (i) Assessing the watershed, ground water and or river hydrology in the area of the intake of selected schemes (using secondary or primary data); and
- (ii) Preparing the 'Water Requirements and Availability' annex from the water sources into the irrigation schemes.

116. Agricultural Economist (international, 5 person-months). The agricultural economist will have a relevant educational background (preferably in economics) with at least ten years' experience in undertaking economic analysis of agricultural projects, preferably irrigation rehabilitation projects. Experience of undertaking EIRRs according to ADB or World Bank guidelines will be an advantage. S/he will report to the team leader and will be responsible for:

- (i) Preparing farm budgets for the subprojects including organization of a farm survey to determine farm size, current cropping type and patterns, crop yields, cropping intensities, and cropped areas.

- (ii) Prepare EIRRs for the subprojects and write the economic and financial analysis annex and economic analysis section of the feasibility reports. This will require undertaking sensitivity analysis and determining subproject benefit distribution, poverty impact and household financial returns. The economic and financial analysis reports and Excel files prepared at project preparation stage can be used as templates.

117. **Agronomist (national, 5 person-months).** The agriculturist will have a relevant educational background in agronomy or related fields with at least five years' experience in agricultural development. The expert should have experience in undertaking agricultural surveys. S/he will report to the international agricultural economist and will be responsible for:

- (i) Under the guidance of the agricultural economist, undertake farm surveys to collect necessary information for the agricultural economist to prepare farm budgets for the subprojects. This will include collecting information to determine farm size, current cropping type and patterns, crop yields, cropping intensities, and cropped areas (preferably sub-divided between head, middle and tail reaches).
- (ii) The potential to changing the cropping calendar on the basis of improved water availability and less impact damage to produce with rural road improvement should be determined
- (iii) Collect market prices for agricultural products and for inputs, as required by the agricultural economist.

118. **Social Safeguards Specialist (international, 2 person-months; national, 5 person-months).** The social safeguards specialists will have a relevant educational background (preferably in a social science) with adequate experience in resettlement and social safeguard procedures for donor organizations such as the ADB or World Bank. The national specialist will assist the international specialist. They will report to the team leader and will:

- (i) Organize socioeconomic surveys in the subproject areas in order to prepare the socioeconomic survey and analysis annex of the feasibility reports;
- (ii) Take the lead in organizing public disclosure meetings in order to present the project and determine stakeholder concerns – and ensure that the engineering teams are aware of these;
- (iii) Once sites for infrastructure have been identified, undertake field visits and conduct an involuntary resettlement and ethnic group screening to determine if there are any resettlement impacts (see template in the Land Acquisition and Resettlement Framework [LARF]) and ethnic group impacts (see template in the Ethnic Group Development Framework [EGDF]);
- (iv) If impacts are expected, then undertake a census of affected households and ethnic groups and determine any impact;
- (v) Prepare the due diligence report (DDR) for category C and a land acquisition and resettlement plan (LARP) (for Category B) including a public disclosure plan as an annex, and details on mitigation measures. The LARPs produced in during the project preparation stage can be used as templates, and procedures outlined in the LARF should be followed.
- (vi) Prepare the due diligence report (DDR) for category C and an ethnic group development plan (EGDP) (for Category B) including a public disclosure plan as an annex, and details on mitigation measures. The EGDPs produced in during the project preparation stage can be used as templates, and procedures outlined in the EGDF should be followed.

- (vii) Once finalized and approved, assist the PMU to ensure that details of DDRs or the LARPs, or EGDs are disclosed to affected households and that the public disclosure plan is disseminated as required. This may require field visits.

119. Environmental Safeguards Specialists (international, 2 person-months; national, 4 person-months). The environmental safeguards specialists will have a relevant educational background with adequate experience in environmental safeguard procedures for donor organizations such as the ADB or World Bank. They will report to the team leader and will:

- (i) With the social safeguards team, jointly organize public disclosure meetings in order to present the project and determine stakeholder concerns – and ensure that the engineering team is aware of such concerns
- (ii) Once sites for structures have been identified, undertake an environmental screening to determine if there are any environmental impacts, and thus determine the environmental category (see template in the Environmental Assessment and Review Framework (EARF));
- (iii) If the subproject is classed as category B (potential adverse environmental impacts are site-specific, few if any of them are irreversible, and in most cases mitigation measures can be designed more readily than for category A projects) then prepare an initial environmental examination (IEE), including an environmental management plan (EMP). The procedures set-out in the EARF should be followed, and the IEE prepared at PPTA stage can be used as a template;
- (iv) If the subproject is classed as category C (a proposed project is likely to have minimal or no adverse environmental impacts) then review environmental implication and provide a write-up for insertion in the feasibility study report.

120. Procurement Specialist (international, 3 person-months; national, 6 person-months). The procurement specialist will have a relevant educational background with adequate experience in ADB procurement procedures, including the preparation of civil works tender documents. S/he will report to the team leader and will be responsible for:

- (i) The preparation of tender documents for the subprojects in accordance with ADB guidelines, taking into account the national procurement guidelines. Tender documents prepared during the project preparation stage can be used as templates.
- (ii) Write the 'subproject procurement' section of the feasibility reports.

V. CLIMATE-RESILIENT VARIETY DEVELOPMENT AND DISSEMINATION PACKAGE

121. Myanmar is one of the most vulnerable countries in the world to climate change. Agriculture sector is one of the most vulnerable sectors to such impacts. The climate change events reflected in terms of increased frequencies of temperature extremes, frequent droughts, and floods have already started affecting agricultural production and productivity and particularly more so in marginal or low input environments like Myanmar.

122. The climate-friendly agribusiness value chains sector project aims to support the Ministry of Agriculture, Livestock and Irrigation (MOALI) in production and multiplication of climate-resilient varieties of rice and vegetables. In addition, assistance will be provided to MOALI to develop a commercialization program with recommendations on the legal framework to develop intellectual property rights and partial cost recovery for the institution.

123. The climate-resilient traits to be selected in new varieties shall include shorter maturity duration, tolerance to drought, tolerance to high temperature, tolerance to prolonged flooding, anaerobic germination, as well as traits supporting better adaptation to water saving cultivation practices- dry direct seeding and alternate wetting and drying. This will not be a basic plant breeding program which will take 10 years to develop. Instead, the focus would be on testing available climate-resilient lines within a 5-year program that includes continued selection, agro-climatic adaptation, climate-resilient trait evaluations, yield comparisons and farmer and processor evaluation. Ensuring the availability of quality seed of climate-resilient varieties in adequate quantity at right time poses greater challenge rather than production per se.

124. The project will also support large scale seed multiplication of climate-resilient varieties in target provinces and distribution of quality seed to farmers. For example, new rice varieties suitable for direct seeding, and for alternate wetting and drying technologies will be demonstrated together with the full technology package on about 100 hectares in each target township. The project will recommend standards for seed certification procedures for different grades of seed, and seed certification procedures for the approval of and implementation by the government.

125. By 2025, it is expected that at least two climate-resilient varieties of rice and vegetables would be released for commercial production; and that MOALI would be able to achieve partial cost recovery in variety development and foundation seed supply with the corresponding legal framework in place. The project will develop seed quality standards, seed certification standards for different classes of seeds for the four crops and maintain such standards in the quality seed production in the current project.

126. The scope of work also covers the development and dissemination of climate smart agriculture (CSA) practices including improved land-water-nutrient management and crop establishment practices. The work includes dissemination of mechanized cultivation practices that have reduced risk and drudgery and generate avenues for employment for youth and women farmers. The project will work closely with MOALI and other key institutions as well as private-sector partners for the deployment of the climate-resilient varieties and technology of different crops. In addition, the work includes efforts to reduce postharvest losses during harvesting, drying, storage, and processing through implementation of modernized post-harvest practices, capacity development and training on postharvest technology, and the development of linkages between the public and private sector.

127. An international research institution of high repute will be recruited to deliver the above services. Based on assessment of various institutions in the region focusing on development and

deployment of climate-resilient varieties, and substantial contributions made so far on climate smart agriculture in various countries including Myanmar, it is proposed to select the International Rice Research Institute (IRRI) to deliver the above services. The detailed terms of reference will be developed by MOALI with cooperation from project implementation consultants during the first year of project implementation after assessing needs of target crops in target provinces.

128. IRRI has been working with Myanmar on crops and climate change research. The Institute has defined a coherent research portfolio on climate change emphasizing on three areas: adaptation, mitigation, and policy. This sets crop production into the broader context of food supply and food security alongside socioeconomic issues, such as rural development and gender mainstreaming. IRRI also maintains solid working relationships with other international crop research institutes belonging to the Consultative Group on Agricultural Research (CGIAR) and has agreed to deliver their solutions to Myanmar in a seamless manner.

129. Currently, Myanmar and IRRI are conducting joint research projects on climate change adaptation and mitigation, climate-resilient rice varieties, remote sensing-based crop monitoring, improvement of farmers' livelihoods, and postharvest technology. Many national researchers are also benefiting from IRRI's training and capacity-building activities. Some achievements of IRRI in relation to the development of climate-resilient varieties are listed below:

- (i) **Flood tolerance.** The erratic floods experienced in rainfed and flood-affected areas are usually caused by heavy rainfall, overflow of nearby rivers and canals or sometimes tidal movements as in coastal areas. These floods cause serious problems for rice and other crops because of the poor or non-existent drainage and, in some cases, the topography of the land prevents fast water movement to drain flooded fields. Through conventional breeding, IRRI developed a rice variety that can withstand being submerged under water for two weeks. After the gene (called SUB1 gene) was found, it was infused into popularly grown rice varieties in rice-growing countries in Asia. Scuba rice is spreading fast in several countries over the last few years and are currently grown by more than 5 million farmers in Asia.
- (ii) **Drought tolerance.** Drought is the most widespread and damaging of all environmental stresses, affecting 23 million hectares of rainfed rice in South and Southeast Asia. IRRI scientists have identified several key regions of the rice genome that give the rice drought tolerance and improve rice grain yield under drought. IRRI is working towards introducing drought tolerance into popular high-yielding rice varieties. By using drought-tolerant rice, farmers can enjoy 0.8-1.2 tons per hectare yield advantage than non-drought-tolerant varieties. This yield advantage will make the drought prone areas of target provinces in Myanmar to be much more productive, contributing to food security in poor rural communities.

130. Some achievements of IRRI on climate smart agriculture techniques are listed below:

- (i) **Climate smart water management.** IRRI has developed the alternate wetting and drying technology (AWD) or intermittent irrigation of the rice field as an effective water-saving measure. It reduces water consumption in paddy rice by 30% and consequently, reduces the cost of pumping water. Additionally, AWD helps mitigate emissions of methane—a greenhouse gas—in rice production by 50%.

- (ii) **Nutrient management.** Fertilizer often represents the highest input cost for farmers after labor, accounting for about 20% of the total cost of production. Soil nutrient knowledge can guide the development of practical tools to help farmers increase rice production and reduce costs through smart nutrient management. Importantly, the work shows that when fertilizer is used appropriately, yield can boost without negative impact on soil health.
- (iii) **Pest management.** Through a collaborative research network with national scientists in Asia, IRRI and ADB initiated the Rice Planthopper Project. It promotes ecological engineering as a management strategy to build ecological diversity which strengthens the rice field's natural capacity to cope with pests.

131. In view of the wide-ranging achievements in development of climate-resilient varieties and dissemination of climate smart agricultural practices and technologies to various countries, and in recognition of outstanding contributions to the Myanmar research institutions, IRRI is ideally placed to provide its services under this package in a comprehensive manner. Estimated budget below.

I.	Identification, testing, multiplication and demonstration of climate-resilient varieties of rice and vegetables	\$550,000
II.	Capacity strengthening climate smart agriculture focusing on rice and vegetables	450,000
III.	Personnel requirements	970,000
		\$1,970,000

VI. EXTERNAL MONITORING AGENCY

A. Scope of Services and Tasks

132. Key responsibilities include:

- (i) Review of the feasibility reports of subprojects to include the annexes of (a) Social Impact Assessment (the EGDs, or IPPs and the GAPs), (b) Initial Environmental Examination (the EMPs), and (c) Land Acquisition and Compensation Plan (LACP).
- (ii) Review of participation and disclosure and assessment of the adequacy of (a) process such as participation, consultation, grievance resolution, (b) integration of gender vulnerable groups and ethnic groups into planning and implementation of activities; and (c) mitigation of environmental impacts with respect to the EGDs, GAPs, EMPs and RPs.
- (iii) Development of a monitoring and assessment plan responding to the scope of works outlined in these terms of reference including the detailed field survey plan.
- (iv) Conduct of field monitoring survey according to the monitoring plan by interviewing the concerned households as well as the project staff.
- (v) Conduct water quality monitoring.
- (vi) Assessment of the attainment and sustainability as defined in the EGDs, GAPs, EMPs and RPs. Particularly, on environmental issues, EMA 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.

B. Team Composition and Qualification Requirements

1. Safeguard Monitoring Specialist/Team Leader

133. **Qualifications.** The expert 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 a bachelor's degree on irrigation, agriculture, economics or social sciences.

134. **Tasks.** The specialist will be responsible for the overall planning and management of the Safeguards Monitoring. Specifically, she/he will be responsible for the following:

- (i) Review of the (a) Social Impact Assessment (the EGDs, or IPPs and the GAPs), (b) Initial Environmental Examination (the EMPs), and (c) Land Acquisition and Compensation Plan (LACP) in the FS reports.
- (ii) Review previous Safeguard Monitoring Reports.
- (iii) Assess the adequacy of: (a) process such as participation, consultation, grievance resolution, (b) integration of gender vulnerable groups and ethnic groups into planning and implementation of activities; and (c) 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 EMA 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.
- (viii) Prepare the Safeguard Monitoring Report, which includes the results and assessment on (a) EMPs, (b) EGDs (or IPPs), (c) GAPs and (d) LACPs.
- (ix) Conduct the field monitoring survey on resettlement.
- (x) Assist the Safeguard Monitoring Team Leader in preparing the draft safeguard monitoring report on: (i) Ethnic Group Development Plans (EGDs), (ii) Gender Action Plan (GAPs), and LACPs for the PRI subprojects.

2. Resettlement Specialist

135. **Qualifications.** The expert will have preferably 5 years of experience in conducting socio-economic surveys on rural infrastructure or agricultural development projects utilizing different methodologies such as interviews using structured questionnaires, and focus group discussions.

136. **Tasks.** The specialist will assist in conducting field monitoring survey of PRI subprojects. Specifically, the specialist 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.

3. Environment Specialist

137. **Qualifications.** The 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 interviews using structured questionnaires and focus group discussions.

138. **Tasks.** The specialist will assist in conducting field monitoring survey of PRI subprojects. Specifically, s/he will:

- (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 subprojects.

4. **Assistant Surveyors** - Three (3) assistant surveyors should be selected in each relevant province.

139. **Reporting requirements and Deliverables.** The results of the monitoring will be part of the quarterly progress reports of the overall project.

- (i) 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) Draft Safeguard Monitoring Report of each mission with a soft copy.
- (iii) Draft Safeguards Monitoring Report based on NPMO/PIC comments.
- (iv) Final Safeguard Monitoring Report, which includes the results and assessment on EMPs, EGDPs (or IPPs), GAPs, and RPs.
- (v) Hard copies of the reports must be accompanied with soft copies (not pdf).

140. **Client's inputs and counterpart personnel.** EMA will be required to spend considerable time in each of the participating provinces. PMU and PIUs will make available to EMA all relevant data, maps and reports, and ensure access to all equipment purchased under the Project at no cost to the EMA. PMU and PIUs will provide counterpart and support staff to work with ESM, and will arrange necessary introductions to concerned government organizations, ministries and their departments.