I. Project Context

Country Context

Myanmar is the largest country in mainland Southeast Asia with a land area of about 654,000 square km. It is located between Bangladesh, China, India, Lao PDR, and Thailand, with more than 2,800 miles of coastline. It is also one of the poorest countries in East Asia, with an estimated poverty headcount between 26 and 37 percent, depending on the methodology used, among its population of around 52 million. The new government which took in office in March 2011 has introduced sweeping political and economic reforms. Myanmar is now embarking on a triple transition: from an authoritarian military system to democratic governance; from a centrally directed economy to a market-based economy; and from 60 years of conflict to peace in the border areas. From a strategic point of view, agriculture is of central importance for achieving the twin goals of ending extreme poverty and promoting shared prosperity in Myanmar. The sector accounts for about 36 percent of the GDP, which is largest share of GDP among ASEAN members. Rice production constitutes about 30 percent of agricultural GDP and covers 70 percent of cultivated land. The sector generates about 53 percent of total employment and is source of livelihoods for about 70 percent of population who live in rural areas. The poverty headcount, which ranges from 26 to 37 percent depending on methodologies, is highest in upland areas, but in absolute terms most
rural poor live in the Dry Zone (34 percent), followed by the Delta region (25 percent), according to the Systematic Country Diagnostic carried out by the World Bank Group in 2014. In the lowland areas of the Delta and the Dry Zones where population densities are highest, poverty is associated with landlessness or limited farmland holdings. The rural poor in these areas depend primarily on farm income generation and on-farm seasonal and other informal labor opportunities. Among the rural households who own land persistent poverty stems from a combination of low productivity of farming systems and high vulnerability of these systems to adverse weather events, especially drought in areas featuring limited or unreliable access to irrigation services. The government places high priority on the development of the agriculture sector and sees it as the basis for food security, poverty reduction, job creation, and export promotion.

**Sectoral and institutional Context**

Myanmar has a favorable agricultural potential. It has abundant water resources -- 20,870 m³ per person compared to the Asia-wide average of 3,948 m³ per person -- and relatively abundant agricultural land, which translates into the highest agricultural land per worker in the East Asia and Pacific (EAP) region of about 1.1 ha/worker, compared to 0.8 ha/worker in Thailand and Cambodia and less than half of Myanmar figure in Vietnam and Indonesia). According to the Myanmar Census of Agriculture (2010), the average farm area is 2.6 hectares, which is the second largest in EAP after Thailand (3.1 ha) (and about five times of that prevailing in Vietnam’s Mekong Delta region). Finally, it has diverse agro-ecological conditions which would allow it to produce a wide range of temperate, sub-tropical and tropical crops. The current agricultural productivity is constrained by under-supply of public services (extension, basic education), low levels of technology adaptation and farm mechanization, insecure irrigation water supply, limited access to affordable credit suitable for agricultural production cycles, and rising labor costs that have trapped farmers in poverty even within double cropping systems in irrigated areas. There is a lack of an overarching and clear agricultural sector strategy in Myanmar to guide public sector and donor spending programs. The effectiveness of current public spending programs is also affected by the nature of agricultural services provided to smallholders. Too often, public goods and services provided to farmers, such as irrigation and extension, are supply driven with little consideration of farmer interests. For example, farmers’ crop choices could be sometimes restricted by local authorities at regional and district level who make decisions on water allocations. The limited extension services are often focused on the promotion a single crop rather than helping farmers to overcome problems they are facing in their farming systems, such as soil infertility and fertilizer use, pest management, increasing labor cost, etc. At the same time, farmers’ incentives to invest in better water, soil and crop management technologies may be constrained by their lack of security on water and land use rights, as well as issues related to the underdeveloped marketing systems and high volatility of agricultural prices. Many irrigation schemes function below their potential because of inappropriate operation of reservoirs and a lack of responsive irrigation system management. For example, while about 2 million hectares are equipped with irrigation and drainage infrastructure, a second crop is being grown on only about 28 percent of this area (2011/12). This may reflect both technical deficiencies as well as uncertainties farmers are facing in marketing their crops. While primary irrigation structures (dams, canals) seem in general in good shape there are problems in getting water to farmer fields. With improved management and a change in cropping patterns, including to non-rice crops, it is possible to expand the cropping areas and cropping intensity. This may necessitate minor structural alterations to the irrigation schemes to improve drainage and, for some fields, to which improves in-field drainage through land leveling. However, improving irrigation management is not sufficient to increase farm incomes. This is
because farmers often do not possess the necessary agronomic technologies and skills to take advantage of an improved access to irrigation. The current public extension system is underresourced and extension personnel rarely visit farmers to provide advice on the correct fertilizers rates to use improved technologies such as improved seeds. There is also some reluctance by farmers to change from growing rice to more water efficient crops, such as legumes and sesame. This may be partly caused by the rigidity of irrigation systems which does not offer enough flexibility in on-field water delivery and thus result in a lack of control over water levels on individual farm plots. The general under-capitalization of smallholder farming systems in Myanmar caused by decades of public under-investment and policy inefficiency fuels the risk of a vicious cycle of declining terms of trade. The development of smallholder agriculture in Myanmar thus requires significant public investments in institutional development, technology generation and dissemination, rural infrastructure, and human capital for years to come. The Ministry of Agriculture and Irrigation (MOAI) has made significant investments in irrigation infrastructure between the 1980s and 2000s which can serve as platform for development of smallholder farming systems. Many of these schemes host large numbers of smallholders who have the potential to respond to public investments under a supportive environment. These schemes would offer good opportunities for landscape-based rural development approaches that address agricultural, natural resource management, and social development goals.

II. Proposed Development Objectives
The Project Development Objective is to increase crop yields and cropping intensity in the selected existing irrigation sites in Bago East, Nay Pyi Taw, Mandalay, and Sagaing regions.

III. Project Description

Component Name
1. Irrigation and Drainage Management

Comments (optional)
The component seeks to enhance more responsive and reliable provision of irrigation and drainage services in the project areas to enable an increase in irrigation area coverage, a resulting better farm productivity and better distribution of benefits between upstream and downstream users. It will initiate institutional change required for the provision of farmer-responsive irrigation services and finance the improvement and rehabilitation of irrigation and drainage infrastructure covering about 35,000 ha within up to 8 selected schemes in the project regions and will pilot 2-3 small land improvement sites in these schemes. The component would support also inclusive land administration activities in the selected project irrigation sites.

Component Name
2. Farm Advisory and Technical Services

Comments (optional)
The component seeks to enhance MOAI technology development and farm advisory services at target townships which host selected irrigation schemes to improve farmer crop choices and increase farm productivity. It will support quality seed production, soil nutrition management, integrated pest management, agricultural extension services, and farm mechanization.

Component Name
3. Project Coordination and Management

Comments (optional)
This component seeks to support the project coordination, technical support, communication activities, monitoring, and evaluation.

**Component Name**
4. Contingent Emergency Response

**Comments (optional)**
This component allows a rapid reallocation of credit proceeds from other components to provide emergency recovery and reconstruction support following an eligible crisis or emergency.

### IV. Financing (in USD Million)

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<th></th>
<th>Amount</th>
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<tr>
<td>Total Project Cost</td>
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<tr>
<td>Total Bank Financing</td>
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<td>Financing Gap</td>
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<td>For Loans/Credits/Others</td>
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### V. Implementation
The MOAI will be the implementing agency of the project. The Project will be governed at the Union level by the National Project Steering Committee (NPSC) and at the township level by the Township Agricultural Coordination Committees (ACC). The project will be managed by the Project Management Unit (PMU) which will be integrated within the existing structures of Department of Irrigation (ID). The PMU will be located in Nay Pyi Taw in MOAI headquarters. PMU would be responsible for day-to-day management and coordination of the project. It will be responsible for the project financial management and procurement functions. It will ensure that annual work plans are prepared, budgeted and implemented in a timely manner, and that management of project funds is in line with the provisions of the project’s eligibility guidelines. The PMU will be responsible for management of the Designated Accounts; disbursement of project funds and replenishment of the project bank accounts and preparing and submitting withdrawal applications; and consolidation of annual work plans, budget planning, arrange for project annual audit, project reporting and M&E.

Implementation of the project activities will be carried out by five technical departments (Department of Irrigation/ID, Department of Agriculture/DOA, Department of Agricultural Research/DAR, Agricultural Mechanization Department/AMD, and Settlements and Land Records Department/SLRD) through their central, regional, district and township level structures. ID will be the lead agency for the implementation of the Component 1, with technical inputs from SLRD and AMD, and DOA would be the lead agency for Component 2, with technical inputs from DAR and AMD. The implementation of field activities will be done by respective township level staff with the supervision and technical backstopping from the team of central/regional/district level Subject Matter Specialists (SMS). The implementing departments are responsible for the initiation of the procurement activities as per work plan, provision of technical specifications and TORs to PMU and serve as members of the evaluation committee; accounting for funds on their respective Operating Accounts and at district level accounts and provision of financial information to PMU for the compilation of the financial documents; and preparation of the annual work plans of their respective sub-components and activities, and provision of information and indicators for the PMU for the
consolidated project reporting. The ACCs are township level structural coordination bodies, which are responsible for the coordination of crop planning and extension activities, and makes irrigation water allocation and distribution decisions. The main function of the ACC under the project would be to provide a platform for joint (MOAI-farmer) planning and monitoring of project activities in targeted irrigation schemes. Implementation of the project activities at the township level will be done by the Project Implementation Committees, which is a sub-committee under ACC, and it includes township level staff of the implementing MOAI departments.

VI. Safeguard Policies (including public consultation)

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<td>Projects in Disputed Areas OP/BP 7.60</td>
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Comments (optional)

VII. Contact point

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