

SECTOR ASSESSMENT (SUMMARY): AGRICULTURE, NATURAL RESOURCES, AND RURAL DEVELOPMENT

Sector Road Map

1. Sector Performance, Problems, and Opportunities

1. Myanmar is one of the largest countries in Southeast Asia both for land area and population.¹ The country may be divided roughly into five major topographic and climatic zones: the mountainous region, the Shan Plateau, the central dry zone, the delta region, and the coastal region. Agriculture accounts for 36% of the country's gross domestic product (GDP), having declined from 57% in 2001.² Annual sector growth reached 21% in 2005 but has since slowed considerably to below 5% in 2010. Agriculture accounts for 60%–70% of employment,³ and 25%–30% of exports.⁴ About 30% of the rural population is landless and has no source of income other than agricultural labor.⁵ As a result, 36% of the rural population lives below the poverty line, compared with a national poverty rate of 26%.

2. Myanmar's agricultural development potential is considerable and offers the most significant opportunity for inclusive economic growth. The country has 18.2 million hectares (ha) of arable land, of which only 13.3 million ha (73%) are cultivated at present. Of cultivated land, only 2.1 million ha (16%) are irrigated, in the main monsoon season, while 11.2 million ha (84%) are rainfed. Rice is the main crop; other crops cultivated include pulses, oilseeds, maize, cotton, rubber, sugarcane, tropical fruits, and vegetables.⁶

3. Myanmar has abundant water resources with five major rivers basins, an annual per capita water endowment of 24,000 cubic meters (more than 10 times that of China or India), and considerable potential for irrigation and hydropower generation. However, only about 10% of the available water resources are presently withdrawn, and 90% of withdrawal is for irrigation. This is partly because present irrigation withdrawal is largely by pumped systems on the main incised rivers or by run-of-river (small storage systems on their smaller tributaries). Rainfall amounts vary considerably from one region to another—from highs of 4,000–6,000 mm annually along the coastal reaches and in the mountains of Rakhine and Tanintharyi, to as low as 500–1,000 mm in the dry Central region. With such low levels of rainfall, there is insufficient precipitation to produce a rice crop. Rice cultivation in the relatively heavily populated Central region depends, therefore, on irrigation, even during the monsoon season. In contrast, excessive rainfall in other regions of Myanmar, notably in the Delta region, often results in flooding, the loss of standing crops and the displacement of significant portions of the population.

4. Myanmar is well positioned to access agricultural export markets thanks to its strategic geographic location with respect to China and India and participation in regional groupings such as the Association of Southeast Asian Nations (ASEAN) and the Greater Mekong Subregion

¹ This summary is based on ADB. 2012. *Interim Country Partnership Strategy: Myanmar, 2012-2014. Sector Assessment (Summary): Agriculture and Natural Resources*. Manila.

² ADB. 2011. *Key Indicators*. Manila. In 2010, agriculture's share was 36.4%, down from 57.2% in 2000.

³ ADB. 2011. *Key Indicators*. Manila. In 1997, 82% of the workforce was engaged in agriculture, while the Myanmar Census of Agriculture indicates that 69.4% of the population lived in rural areas in 2003.

⁴ United Nations Development Programme. 2011. *Agriculture Development Issues and Strategies: Myanmar*. Yangon. Figures for the percentage of exports in recent years range from 30.5% in 2005 to 25.7% in 2008. However, the 2008 figure is probably anomalous since that year much of the rice crop was destroyed by Cyclone Nargis. The percentage of exports from the sector increased again to 27.9% in 2009.

⁵ In addition, some 37% of rural households have landholdings of less than 2.0 hectares.

⁶ Myanmar is the world's second-largest producer of pulses and beans, and ranks third for sesame after China and India.

(GMS). Myanmar enjoys a potential comparative advantage in rice production within Southeast Asia, with opportunity to export rice to regional markets.⁷ Export potential also exists in other crops such as beans, pulses, and oil seeds.

5. The performance of the agriculture sector and its potential for growth have been enhanced by recent progressive agricultural policy reforms such as (i) land law reforms; (ii) abolition of the rice production quota, allowing farmers to choose which crops to cultivate; (iii) liberalization of domestic and international marketing of rice in 2003, and of industrial crops in 2004; (iv) removal of the export tax on key agricultural commodities; (v) a law allowing the establishment of microfinance institutions; (vi) use of crops as loan collateral; and (vii) passage of a plant pest quarantine law in 1990, a pesticide law in 1993, and a fertilizer law in 2000. In spite of this progress, the need remains to adopt a more coherent and comprehensive approach to agriculture and rural development, and to make agriculture more commercially oriented, as has been done by the leading ASEAN members that have sizable agriculture sectors. To accomplish this, the government has been adopting a value-chain approach to agriculture since 2011, which will facilitate the job creation and income growth needed to achieve not only rural development but also sustainable inclusive growth.

6. Key constraints still to overcome are (i) weak land and water resource management; (ii) limited access to agricultural support services—input supply, research and extension, market information, and credit (at both the farm level and along the entire agricultural value chain); (iii) low capacity of farmers' and irrigation water users' organizations; (iv) weak, inadequate, and poorly integrated marketing; (v) limited or low-quality infrastructure (hardware and software); (vi) limited investment and private sector involvement in value chains; and (vii) a less than fully supportive policy environment. In the productive areas devastated by the 2008 cyclone, these constraints have been exacerbated by the destruction of vital rural infrastructure (including flood and salinity control structures).

7. **Governance and institutional capacity.** The Ministry of Agriculture and Irrigation (MOAI) is responsible for the food crop industry. With a staff of 70,000, it is a large ministry with a broad mandate covering water resources, irrigation, mechanization, settlement, and land records.⁸ MOAI's effectiveness is constrained by an inadequate budget, lack of relevant technical expertise (other than civil engineering), and poor access to many rural areas. The need to reform the legislative framework for water resources is a critical measure to be taken within broader water sector reform. The National Water Policy approved by the National Water Resource Committee (NWRC) in March 2014 recognizes the need for a system of laws and institutions, along with a legal framework and a strategic management plan, to improve integrated water resource management (IWRM) in the country. Existing laws, rules, and regulations need to be reviewed and revised to establish a unified water resource law and a more effective legal framework for managing water resources for alternative uses.⁹

8. **Promoting and sustaining Myanmar's competitiveness.** The continuing emphasis on rice is necessary, but not sufficient to generate more income, employment, rural development, and inclusive growth. The medium- to long-term growth of the sector will be determined by the extent of economic diversification, both vertical and horizontal. Growth in regional market demand is expected to be most significant for fruits and vegetables, poultry, fish and seafood, pulses, and edible oils, creating a derived demand for inputs and related services.

⁷ Food and Agriculture Organization of the United Nations (FAO). 2013. *Geographic Determinants of Rice Self-sufficiency in Southeast Asia*, ESA Working Paper No. 13-03.

⁸ Myanmar Agricultural Services is the largest unit within the ministry, with a staff of more than 14,000.

⁹ In 2006, the State Peace and Development Council enacted the Conservation of Water Resources and Rivers Law. However, it deals mainly with the regulation of transportation, fishing, and sewage discharge.

2. Government's Sector Strategy

9. Various recent government reforms have highlighted the importance of agriculture and rural development in Myanmar, as manifest in the Poverty Alleviation and Rural Development Action Plan, the Framework for Economic and Social Reforms, the National Comprehensive Development Plan, and the Rural Development Strategic Framework.¹⁰ The government regards agricultural development as one of the driving forces of the economy and the foundation for the broad-based development and inclusive growth that is needed to improve the well-being of most of Myanmar's population.¹¹

10. However, practice has not always matched the stated objectives and priorities for the sector. For example, the poor state of rural roads severely constrains access to rural areas; rural areas are hardly served by electricity; government funding for the management of the sector is far below needed levels. The challenge is to identify the principal needs for growth, allocate adequate resources, and strengthen key institutions in the sector. It will also be necessary to adopt policies that promote the involvement of the private sector in rural and agricultural development in areas such as marketing, processing, storage, and supply of inputs.

3. ADB Sector Experience and Assistance Program

11. The interim country partnership strategy, 2012–2014 of the Asian Development Bank (ADB) for Myanmar supports the government's overarching priority of inclusive economic growth, and the associated sector outcome of stimulating rural development through promoting better access to markets and improved productive infrastructure.¹² ADB's proposed 2014–2017 operational program for agriculture, natural resources, and rural development (ANR) is focused on the (i) Irrigation Command Area Development Project (\$75 million, 2015); and (ii) Climate-Friendly Agribusiness Development Project (\$20 million, 2017). These projects are aligned with the stated government priorities on food security and agricultural growth, e.g., as articulated in the Framework for Economic and Social Reforms, in particular, the emphasis on (i) rural infrastructure, including small and medium-scale irrigation systems and improved rural roads; and (ii) the restructure and redirection of key agri-support institutions and investments to drive broad-based agricultural productivity growth along the supply chains.

12. In December 2013, ADB approved a \$12 million grant from the Japan Fund for Poverty Reduction to support improvements in village- and village-tract-level infrastructure and rural livelihoods in the Ayeryarwady Delta, in Magway and Mandalay regions in the central dry zone, in Tanintharyi Region, and in Shan State.

13. The government, through MOAI, has sought assistance for guiding the development of a vibrant and dynamic Myanmar seed industry, for domestic use as well as export needs. In response, a diagnostic study by ADB has identified critical barriers and constraints to developing a seed industry in Myanmar, such as the lack of productivity enhancing and value chain linkages. The sequencing of interventions within the proposed operational program will enable (i) the initial pilot testing and subsequent consolidation of rural infrastructure and development approaches in diverse geographic and administrative regions; and (ii) development of a comprehensive program of support for an agribusiness value chain.

¹⁰ The Government of the Republic of Myanmar. 2011. *Poverty Alleviation and Rural Development Action Plan*. Nay Pyi Taw.; The Government of the Republic of Myanmar. 2013. *Framework for Economic and Social Reforms*. Nay Pyi Taw.; The Government of the Republic of Myanmar. 2013. *National Comprehensive Development Plan*. Nay Pyi Taw.; The Government of the Republic of Myanmar Ministry of Livestock, Fisheries and Rural Development. 2014. *Rural Development Strategic Framework*. Nay Pyi Taw.

¹¹ FAO. 2009. *National Medium-Term Priority Framework, 2010–2014*. Yangon.

¹² Rural infrastructure is an important component of the strategy to achieve inclusive growth and alleviate poverty.

14. Implementation and institutional capacities across the sector ministries will also be strengthened on a continuing basis to bridge procedural and knowledge gaps on procurement, disbursement, financial management, and safeguard capacity. Capacity development technical assistance projects will support institutional strengthening for environmental management (\$1 million, 2014) and promote a portfolio approach to supporting capacity development on project preparation, design, and implementation (\$1 million, 2015). The investment road map for ANR (2015–2017) is outlined below.

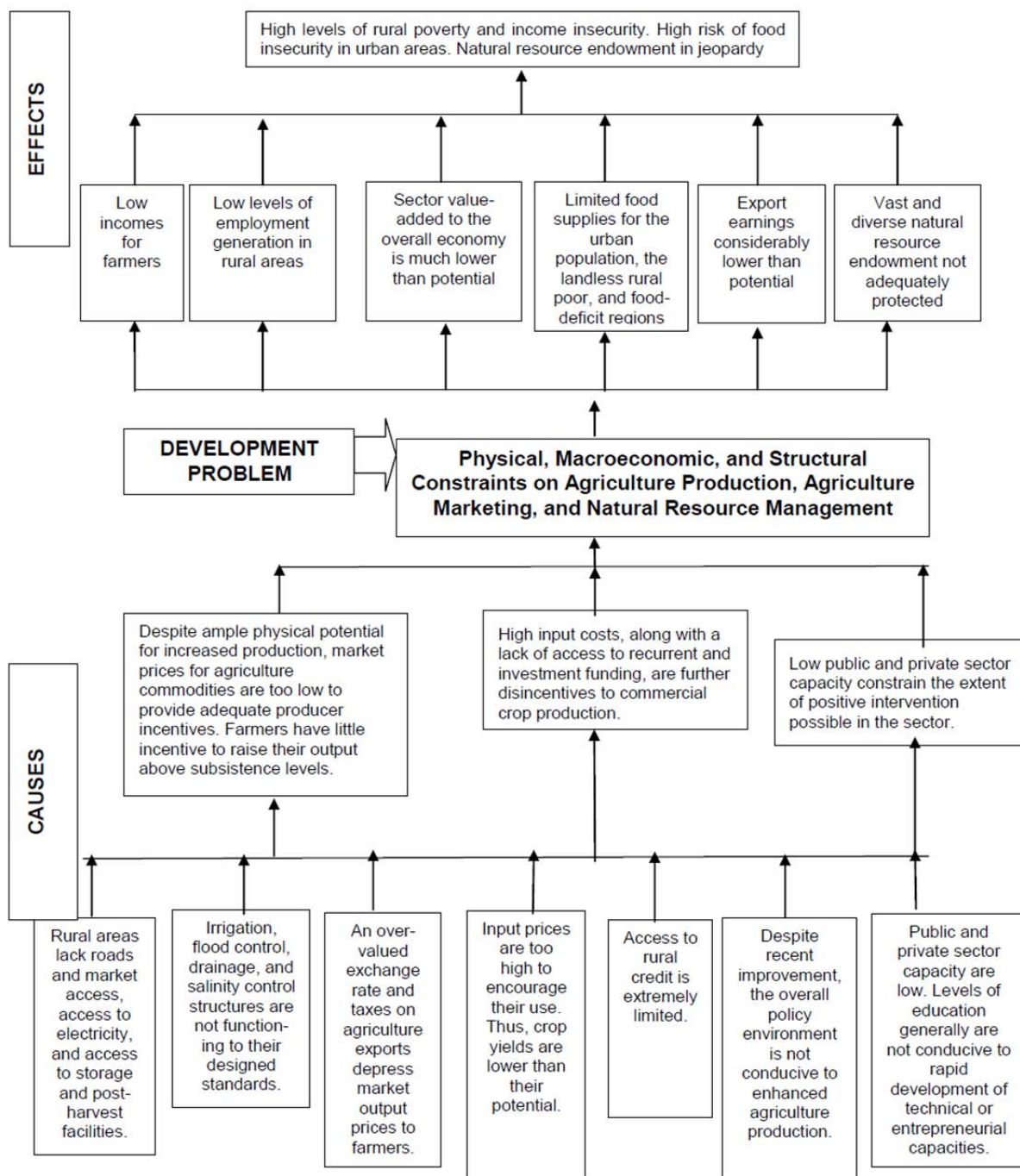
15. **Irrigation Command Area Development Project**—\$75 million; project preparatory technical assistance: \$1.2 million; year of approval: 2015. Provision of better irrigation facilities for the central dry zone in Myanmar (including Mandalay Sagaing and Magwei), which is an area with significant cash-crop cultivation, such as sesame, chilies, and pulses. Support may also include establishing mechanisms for participatory irrigation, i.e., systematically involving farmers and water users in water distribution and canal maintenance. Project activities will be designed within a framework of institutional support for IWRM. ADB has supported, through the ADB-UNESCO-IHE Partnership Fund since January 2013 a project entitled “Supporting National Water Legislation in South Asia and Southeast Asia, “ which includes Myanmar. A National Water Expert Group (EG) has been constituted and is advising the NWRC on water sector reform and leading the advisory work on the governance element through its thematic group “Water for People.” Additional areas to be supported in 2014-2015 will include support to a Strategic IWRM nationwide study including a case study focused on the CDZ in terms of water governance aspects including drought management, permitting regimes, land use and environmental planning.

16. **Climate-Friendly Agribusiness Value Chains**—\$20 million; (regional) project preparatory technical assistance: \$2.5 million (\$1.0 million from the Canadian Climate Fund for the Private Sector in Asia under the Clean Energy Partnership Facility (CEFPF); and \$1.5 million from the Asian Clean Energy Fund under CEFPPF); year of approval: 2017. The project will improve the competitiveness of agricultural value chains in Myanmar by improving aggregation, processing, storage, marketing, and logistics infrastructure. A key area of focus will be the development of the rice seed industry, including production of certified seed, seed testing and multiplication, phytosanitary standards, and improving milling and processing infrastructure, especially for rice in the rainy season, and enhancing technology standards for post-harvest storage and processing. Support for other value chains, in particular pulses and edible oils (groundnut, sesame, sunflower), livestock feed, fruits and vegetables, poultry and fish or seafood will be assessed and prioritized based on domestic and regional demand, agro-ecological suitability, and investment potential. The project will invest in agribusiness facilitation centers, building on the existing model of agribusiness service centers and linking up with the growth centers, industrial zones, and special economic zones.

4. Cofinancing

17. ADB (in collaboration with the Food and Agriculture Organization of the United Nations) is assisting Myanmar in preparing a proposal for the public sector window of the Global Agriculture and Food Security Program (GAFSP). GAFSP cofinancing could support capacity building, policy and institutional development, investment and development planning, and investments. Cofinancing will also be explored with the International Fund for Agricultural Development and Agence Française de Développement. ADB will also assist the Ministry of Environmental Conservation and Forestry to seek cofinancing under the Special Climate Change Fund and Least Developed Countries Fund under the Global Environmental Facility's sixth replenishment (GEF-6).

PROBLEM TREE FOR AGRICULTURE, NATURAL RESOURCES, AND RURAL DEVELOPMENT



Sector Results Framework (Agriculture, Natural Resources, and Rural Development, 2014–2016)

Country Sector Outcomes		Country Sector Outputs		ADB Sector Operations	
Outcomes with ADB Contributions	Indicators with Targets and Baselines	Outputs with ADB Contributions	Indicators with Incremental Targets (Baselines Zero)	Planned and Ongoing ADB Interventions	Main Outputs Expected from ADB Interventions
<p>Incomes of agricultural households increased in real terms</p> <p>Enhanced water resource management in the central dry zone</p> <p>Improved competitiveness of agribusiness</p>	<p>From 2012 to 2016:</p> <p>At least 700,000 villagers benefit from improved rural infrastructure and improved access to markets and social services</p> <p>Income of +/- 10,000 landless households increased by x% from \$ xx to \$xx households.^a</p> <p>Production of irrigated pulses and oil seed food crops increased by +/- 20% from 530,000 to 636,000 tons</p> <p>Water legislation reform enacted</p>	<p>Irrigated area increased</p> <p>Area under non-rice crops increased</p> <p>Institutional, policy, and regulatory environments enhanced</p>	<p>Community-based and prioritized infrastructure schemes and livelihood interventions implemented in 6 townships and at least 96 village tracts</p> <p>Irrigation and drainage improved on 30,000 ha</p> <p>At least xx ha of diversified rice and non-rice cropping based on planned land use and zoning practices (2012 baseline: xx ha)^a</p> <p>Capacity of water user associations and other relevant agencies or organizations (40% women) for sustained operation and maintenance, and system management developed</p> <p>MOAI reforms implemented</p> <p>IWRM framework established</p>	<p>(i) Planned key activity areas Enhancing agricultural productivity, supporting rural connectivity, promoting commercialization and diversification along agribusiness value chains, and supporting improved water resource and environmental management</p> <p>(ii) Projects in the pipeline with estimated amounts CDTA: Environmental Safeguard Institutional Strengthening (\$1 million, 2014) Irrigated Command Area Development Project (\$75 million, 2015) CDTA: Support for Capacity Development to Implement Projects (\$1 million, 2015) Climate-Friendly Agribusiness Value Chain Project (\$20 million, 2017) Strategic Study on IWRM (2014–2015)</p> <p>(iii) Ongoing projects with approved amounts Enhancing Rural Livelihoods and Incomes (\$12 million, JFPR grant) Seed industry diagnostic study</p>	<p>(i) Planned key activity areas Existing storage irrigation systems made efficient and equitable, and new drainage systems developed on 30,000 hectares Efficient and effective agricultural extension and marketing service delivered IWRM framework piloted and tested in the central dry zone Increased participation of local villagers (including at least 40% women) in irrigation management and water user associations Value chains for priority commodities mapped Land availability, suitability, and connectivity for siting post-harvest processing, testing, storage, marketing, and logistics infrastructure assessed</p> <p>(ii) Ongoing projects 50 kilometers of rural access roads constructed or rehabilitated At least 6,000 beneficiaries (no less than 40% of whom are women) trained in livelihood-related skills, including improved crop, fish, and shrimp production</p>

^a Baseline and target indicators will be identified during project preparations in 2015.

ADB = Asian Development Bank, CDTA = capacity development technical assistance, ha = hectare, IWRM = integrated water resource management,

JFPR = Japan Fund for Poverty Reduction, MOAI = Ministry of Agriculture and Irrigation.

Source: Asian Development Bank.