

Strengthening Policies, Institutions and Processes for Sustainable Agricultural Mechanization Development in Myanmar's Dry Zone

fact sheet

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Key Points

- Agricultural mechanization development has strong support from the government at national and institutional levels.
- Current government-led mechanization services are not able to respond to urgent market needs. The roles of the government and the private sector need to be adjusted.
- Several aspects of the policy cycle need to be improved. Technical cooperation among government institutions should be strengthened and policy monitoring and evaluation systems should be further enhanced.
- Efforts and advocacy for social and environmental aspects of agricultural mechanization development should be further strengthened.

Introduction

The *2030 Agenda for Sustainable Development*, adopted by world leaders in September 2015 at the United Nations Sustainable Development Summit calls for concerted action by all countries to foster economic growth, social equity and environmental protection. In the context of developing agricultural mechanization, it is critically important to ensure that technologies are environmental sound and address social dimensions, while delivering economic benefits in order to help effectively tackle issues related to food security and nutrition, agro-enterprise development and poverty reduction.

Agricultural productivity in Myanmar remains among the lowest in Asia, which seriously limits effective poverty reduction. In the Dry Zone, which is facing the problem of labour migration on a substantial scale, agricultural mechanization is deemed necessary to increase crop production and to substitute mechanical power for human power, while also providing farmers with opportunities to cope with the shortened window for critical agricultural activities due to a changing climate.

There are explicit national as well as institutional policies that provide necessary support for the development of agricultural mechanization nationwide. The current government, which assumed office in 2016, has laid down four major economic policies, one of which is 'Building a modern industrialized nation through agriculture development and all-round development of the other sectors of the economy'. The Government of Myanmar had also drawn up the National Policy and Development Plan, which is comprised of the National Comprehensive Development Plan (2011-2012 to 2030-2031) and the Fifth Five Year Plan (2011-2012 to 2015-2016). The agriculture development plan, developed by the Ministry of Agriculture and Irrigation through consultative workshops, is included in the National Comprehensive Development Plan as a sectoral development plan. Both the long-term (20-year) development plan and short-term plan (Fifth Five Year Plan) include agricultural mechanization development. As part of a long-term vision, the government envisages the enhancement of technologies and extension services, the improvement of access to markets and the review and evaluation of agricultural laws and regulations that will contribute to agricultural mechanization development.

The domain of agricultural mechanization involves several stakeholders, but from a policy and target-setting perspective, the Ministry of Agriculture, Livestock and Irrigation (MOALI), Ministry of Planning and Finance (MOPAF), Ministry of Commerce (MOC) and Ministry of Industry (MOI) are the four key institutions that impact the agricultural mechanization development in the country.

Strengths and weaknesses of existing policies, institutions and processes Government interventions and engagement of the private sector

Policies on promoting agricultural mechanization development have been outlined at different levels and various institutions have identified their institutional priorities. Some of the key infrastructure to support agricultural mechanization (such as irrigation canals) is being further developed in the Dry Zone. There are established institutions offering agricultural engineering as a minor programme and some research is being conducted in relation to agricultural machinery. The government is trying to encourage and facilitate the participation of the private sector in agricultural mechanization sector by improving/enacting legislation as well as providing favourable economic policies. Favourable policies to attract foreign direct investment (FDI), as well as local investors, into manufacture and development of agricultural machinery are also in

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Table 1. Summary of key institutions, legislation and policies related to agricultural mechanization development

Ministries	Key institutions (some institutions/ministries are referred to under former names or structures)	Key legislation and policies	Area of impact
Ministry of Agriculture, Livestock and Irrigation (MOALI)	Ministry of Agriculture and Irrigation <ul style="list-style-type: none"> ■ Agricultural Mechanization Department (AMD) ■ Irrigation and Water Utilization Management Department (IAWUMD) ■ Department of Agriculture (DOA) ■ Department of Planning (DOP) ■ Department of Agricultural Land Management and Statistics (DALMS) ■ Department of Agriculture Research (DAR) ■ Yezin Agricultural University (YAU) ■ Myanmar Agricultural Development Bank (MADB) 	<ul style="list-style-type: none"> ■ Five Year Short-Term Plan ■ Farmland Law (2012) ■ The Vacant, Fallow and Virgin Lands Management Law (2012) ■ The Myanmar Agricultural Development Bank Law (1997) ■ The Co-operative Society Law (1992) 	<ul style="list-style-type: none"> ■ Formulate agricultural laws and regulations; ■ Plan and implement related activities; ■ Conduct training and education; ■ R&D; ■ Organize cooperative societies
	Ministry of Cooperatives <ul style="list-style-type: none"> ■ Department of Cooperatives ■ Small-scale Industries Department ■ Cooperative Export-Import Enterprise ■ Central Cooperative Society 		
Ministry of Planning and Finance (MOPAF)	Ministry of Finance <ul style="list-style-type: none"> ■ Myanmar Microfinance Supervisory Enterprise ■ Internal Revenue Department ■ Customs Department 	<ul style="list-style-type: none"> ■ The Law Amending the Commercial Tax Law (2014) ■ The Tax of the Union Law (2014) ■ The Microfinance Law (2011) ■ Myanmar Citizens Investment Law (2013) ■ The Foreign Investment Law (2012) ■ Small and Medium Enterprises Development Law (2015) ■ Small and Medium Enterprises Development Policy (2015) 	<ul style="list-style-type: none"> ■ Tax control; ■ Examine export and import goods; ■ Supervise microfinance; ■ Plan for national economic development; ■ Coordinate domestic and foreign investment
	Ministry of National Planning and Economic Development		
Ministry of Commerce (MOC)	Ministry of Commerce	<ul style="list-style-type: none"> ■ The Export and Import Law (2012) 	<ul style="list-style-type: none"> ■ Manage import licence & process; ■ Implement economic reform
Ministry of Industry (MOI)	Directorate of Industrial Supervision and Inspection	<ul style="list-style-type: none"> ■ Industrial Policy (2016) 	<ul style="list-style-type: none"> ■ Finance SMEs through Small and Medium Industrial Development Bank (SMIDB); ■ Provide technical recommendation for agricultural machinery manufacture
	Central Committee and Working Committee for Development of Small and Medium Enterprises		
	Industrial Development Committee		

place. The development of farmer cooperatives, too, has brought significant benefits to the Dry Zone, with many cooperative societies being very active in the region. This has facilitated the mechanization development process.

The government's objective of transforming the country's approach to agriculture from one based on manual farming to one based on mechanized farming is affirmative and encouraging. However, a number of gaps exist. In spite of efforts to encourage private sector participation, the

government's agricultural mechanization strategy remains largely dependent on government-led mechanization services, which are not able to respond to urgent market needs. Most of the ongoing infrastructure projects focus on the lowland areas of the Dry Zone, whereas the upland areas remain largely underdeveloped. Academic institutions also lack systematic educational programmes majoring in agricultural engineering and research at various R&D institutions has limited coverage of agricultural mechanization. Moreover, financing opportunities from public financing institutions for

agricultural mechanization needs are limited, while an enabling environment for the private sector to finance mechanization investments is yet to be put in place.

The policy cycle and coordination mechanisms

In the agricultural mechanization sector, concerned ministries and government institutions have established targets and objectives, and institutional strategies have been made at the leadership levels to align the activities within each organization. Administrative procedures among concerned institutions are also in place and the duties and responsibilities of each of them have been delineated.

Nevertheless, both the policy formulation and implementation processes in the country have largely followed a top-down approach. The consultations and national workshops are attended by a limited number of experts and senior government officials, leaving the policy formulation process on agricultural mechanization with inadequate participation from relevant stakeholders. Apart from this, other than the national policy and the ministerial level policy, few policies have been outlined at the lower level to meet the specific agroecological or socioeconomic needs in the Dry Zone. Some of the implementation processes are also not fully backed by national policy or legislature measures. As a result of the above, technical cooperation mechanisms remain weak in the agricultural mechanization sector. Monitoring and evaluation systems are at basic level too, and consequently, policy feasibility, efficiency and effectiveness in general are affected.

Sustainability issues

Sustainable agricultural mechanization development has been outlined as one of the four aspects of the national economic policy, which envisions “sustainable development of agriculture towards industrialization and all-round development”. However, in policy implementation processes, much of the emphasis has been given to pursuing economic development, while social and environmental aspects have not been balanced. Government efforts and advocacy towards enhancing the participation and empowerment of women and youth are in need of further strengthening.

Policy recommendations

Roles of the government and the private sector

Through referencing lessons learned and experiences from the Asia-Pacific region in developing agricultural mechanization, the government should consider adjusting its role in this domain by encouraging the private sector to lead the establishment of mechanization supply systems and support services, including research, manufacturing and trade. The government could assume a regulatory role, which would include: setting standards, testing and certification; financing services of a public nature, such as training, licencing of machine operators, research and development, and development of rural infrastructure. This would create an enabling environment for the private sector to invest in the mechanization sector. Detailed recommendations in this regard include:

- **Give further policy consideration to deepening the engagement of the private sector (including FDI).** Various policy options on providing more incentives to the private sector and FDI should be considered. For instance, land ownership could be delegated to natural-born Myanmar nationals to further motivate land development and support promotion of agricultural mechanization. Restrictions on FDI with regard to owning import and export businesses should be lifted to encourage the import of agricultural machinery from abroad by foreign investors. This would provide more options for responding to market demand.
- **Develop further financing options in the public sector for agricultural mechanization development.** Financing institutions from the public sector primarily focus on production, particularly rice production. Financing options are not commonly available for farmers to purchase agricultural machines, particularly for landless farmers. Farmers usually have to turn to alternative sources of finance when purchasing agricultural machines. Limited financing opportunities from public financing institutions are not conducive to the development of agricultural mechanization in general. Hence, development of a wider and more farmer-friendly set of financing options is strongly needed.
- **Develop infrastructure in the Dry Zone, with more focus on the upland areas.** Basic infrastructure, such as roads to the farm plot, electricity and irrigation facilities, should be further developed in the Dry Zone area particularly in the upland parts so as to enable the development of agricultural mechanization.
- **Further develop systematic and comprehensive education and research programmes in collaboration with international organizations.** Education and research in agricultural mechanization can provide trained human resources, create intellectual value and accumulate a knowledge base for the sector's long-term development. Local research can provide facts and findings that reflect local conditions and contribute evidence-based suggestions to policymakers. International collaboration in this process can save some of the time spent on trial-and-error approaches and international resources would provide a reference for local researchers/academia.
- **Establish and conduct testing and standardization for both imported and locally produced agricultural machinery and establish a certification system.** Quality machines are necessary to ensure safety and efficiency, reliability and environmental friendliness. Certification standards could very well reference neighbouring countries or regional networks, such as the Asian and Pacific Network for Testing of Agricultural Machinery, or other commonly recognized international standardization systems. Establishing testing standards at an early stage can also guide local manufactories and pave the way for machinery export.

The policy cycle and institutional coordination

Several aspects of policy formulation and implementation processes of agricultural mechanization can be improved.

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Coordination among existing institutions should be strengthened, particularly technical cooperation. Policy monitoring and evaluation systems should be further enhanced. Detailed recommendations include:

- **Engage a wider range of stakeholders in the policy formulation process.** The consultation process should start from the bottom to the top, inviting inputs from lower level government staff, local communities, particularly farmers of different scales, and the private sector, as well as international organizations and NGOs in this field. As such, stakeholders representing different groups would have their voices heard. Such consultations would also benefit policy implementation at a later stage.
- **Formulate regional/state/township action plans according to the specific conditions of the Dry Zone, while aligning with national policies.** Machine requirements are specific to the local farming conditions in terms of crops, farmland condition, agricultural activities, farming systems and available facilities. The status and particular needs of different farming communities should be assessed to formulate action plans that target specific areas. National policies and strategies for the development of agricultural mechanization should only serve to provide an overall direction to align the activities of each region/state/township.
- **Provide strengthened support in terms of enabling legislation and regulation of policy implementation activities.** Some of the key areas in developing agricultural mechanization, such as land development and land consolidation, should be backed by state legislation after thorough consideration of social and environmental impact. In the absence of such support, achievements in agricultural mechanization development are likely to remain scattered.
- **Improve coordination mechanisms among involved institutions and strengthen their technical cooperation.** Several government institutions are involved in agricultural mechanization activities, such as import, manufacturing and certification. While each of the institutions has its own specific role, technical standards and procedures should be harmonized and strengthened as needed to ensure the quality of the agricultural machines.
- **Set up regular and systematic monitoring and evaluation procedures to assess the performance and results of policy implementation.** Monitoring and evaluation mechanisms can assess and provide feedback on the efficiency and effectiveness of policies, with which policymakers will be able to make sound decisions and/or adjustments. The current feedback system is limited to the responsible ministry or institution. As agricultural mechanization development involves multiple institutions and their policies, cross-sector monitoring and evaluation mechanism is necessary to ensure extensive and accurate feedback is obtained and utilized.

Sustainable agricultural mechanization development

Sustainable agricultural mechanization development emphasizes balanced development across three pillars, economic, social and environmental, to ensure the long-term stability and sustainability of the agricultural sector, as well as society in general. The main recommendation in this regard is to:

- **Emphasize social equity and environmental protection in pursuing economic growth while developing agricultural mechanization.** While social equity and environmental preservation are often overlooked in the development process, in the context of agricultural mechanization, it is especially important that policies and activities for their implementation be designed to avoid exacerbating social inequality and environmental damage.

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