

Supporting Value Chains for Seed Development of Pulses, Legumes and Oil Crops in Myanmar's Dry Zone¹

fact sheet

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Key Points

- Formal seed distribution is not functioning well due to financial constraints and weaknesses in the monitoring system of seed distribution among contact farmers.
- A national seed policy needs to be formulated and adopted to assist the implementation of the Seed Law enacted in 2011.
- The government should increase funding to support R&D, testing and extension services. Technical training is urgently needed for public servants, staff of seed-related associations and farmers.
- Policy reforms are required to promote a shift from the current top-down structure to a bottom-up approach.

1. Main issues facing the seed sector

High quality seeds provide a means by which farmers can introduce new varieties. A shortage of good quality seed is frequently identified as a constraint to increasing crop production in Myanmar. The need for quality seeds in the Dry Zone is particularly important given the geo-climatic challenges it faces and the existing high incidence of poverty and food insecurity. Against this backdrop, establishing value chains for seed development of pulses, legumes and oil crops is of particular importance for agriculture and the improvement of livelihoods in the Dry Zone.

The recent shift to a market-oriented economy has seen the seed sector undergo some reforms, but many of these have not gone far enough to create an environment that is conducive to private sector involvement and investment. At present, almost all seed production and distribution is handled by the Department of Agricultural Research (DAR) and the Department of Agriculture (DoA) of the Ministry of Agriculture, Livestock and Irrigation (MoALI), with a limited amount of private sector involvement. However, the official seed system struggles to produce seeds of sufficient quality and quantity, and many in rural areas are underserved. The extension service responsible for seed distribution lacks capacity and there are not enough staff to reach all farmers. This is exacerbated by poor infrastructure, making transportation costly. The public sector has been successful in generating new varieties, in part, through collaboration with international partners. It must maintain this important role as research provides a foundation for a strong seed sector.

2. Key policies, laws and regulations governing the seed sector

In order to prevent the transmission of pests and diseases from imported seeds and seedlings, the Plant Pest Quarantine Law and Regulation was enacted in 1993. Moreover, the Seed Law has been in place since 2011; this stipulates the rules for research, breeding and selection, varietal development and release of new varieties, seed production and business, registration and approval of new crop varieties, and quality control. However, the Seed Law was only ratified in February 2016. The Plant Varietal Protection (PVP) Law has been drafted and is undergoing approval. It aims to protect breeder rights and to encourage researchers in plant breeding to release quality seeds of new varieties from the country, as well as new varieties of imported seeds. Furthermore, under the new Farm Land Law, the farmer holding land-use rights can rent out land to the private sector for seed development or crop production. In addition, with the technical assistance of the Food and Agriculture Organization of the United Nations (FAO), a National Seed Policy was drafted in 2014, but this is still undergoing approval. Table 1 summarizes key policies for the development of the seed industry.

3. Seed sector value chain

Breeder seeds are maintained in central research farms and foundation seeds of crop varieties released by the National Seed Committee are produced in the satellite research farms of DAR (see Figure 1). The registered seeds produced in seed farms of the Seed Division (SD) are distributed to contact farmers through the Township Agriculture Office. The contact farmers distribute a portion of certified seeds harvested from their farms to neighbouring farmers, but the

¹ This Policy Brief draws on the case study entitled "Policies, institutions and processes to support value chains for seed development for pulses, legumes and oil crops in the Dry Zone of Myanmar", prepared for the Asian and Pacific Centre for Transfer of Technology (APCTT) of the Economic and Social Commission for Asia and the Pacific (APCTT-ESCAP).

majority are sold to township wholesale centres. The wholesale centres usually keep aside the quality grain from the farmers' sale volume, based on a visual check, and sell it to farmers who want seeds at sowing time. The current system of seed multiplication and distribution does not fully support the objective of developing a formal seed flow system.

4. Demand and supply side issues leading to low use of certified seeds

Farmers in the Dry Zone rely on the distribution of quality seeds by the DoA and local seed farms. There is also an informal seed distribution system that involves exchange of seed among farmers through the farmers' seed bank system in some areas of the Dry Zone. However, utilization of certified seed is low at the farm level. On the demand side, adequate knowledge of the use of certified seed is necessary. This requires awareness and support programmes to be expanded in the Dry Zone. Quality assurance and physical accessibility of certified seeds are needed. The price of seed should be affordable for farmers. On the supply side, there are key weaknesses that can be solved by provision of sufficient funds to support research and extension activities, infrastructure improvement for seed processing, storage and seed testing laboratories, and upgrading the technical skills of researchers and technicians (see Figure 2). Private sector participation in seed production of Dry Zone crops is lacking.

5. Strengths and weaknesses of existing policies, institutions and processes for development of seed industry

The neglect of any single component in the seed value chain could affect the entire seed enterprise development in the country. In Myanmar, the seed sector faces a number of threats as a result of the neglect of the seed industry and the stagnation of the seed flow in recent decades. While Myanmar is now on a new development path that is likely to produce much more rapid and sustained growth, it will take some

Table 1. Legislation and policies related to the development of the seed industry

No	Title of Law or Regulation	Scope of Law or Regulation	Responsible Agency	Status (as of Feb 2016)
1.	Plant Pest Quarantine Law	To quarantine to prevent pests from entering Myanmar	DoA, MoALI	Enacted in 1993
2.	Seed Law	To produce crops with quality seed and to carry out seed-related business systematically	DoA, MoALI	Enacted in 2011
3.	Farm Land Law	Liberalization of land-use rights to mortgage, sell, rent, transfer and inherit land	The Settlement and Land Records Department (SLRD), MoALI	Enacted in 2012
4.	Law on Biosafety	To manage the safety of seeds and plant parts	MoALI	Drafted
5.	Plant Varietal Protection Law	To protect breeders' rights	DAR, MoALI	Drafted
6.	National Seed Policy	For seed industry development	DoA	Drafted

Source: Department of Agriculture

Figure 1. Value chain map of seed development (pulses and oil crops) in the Dry Zone

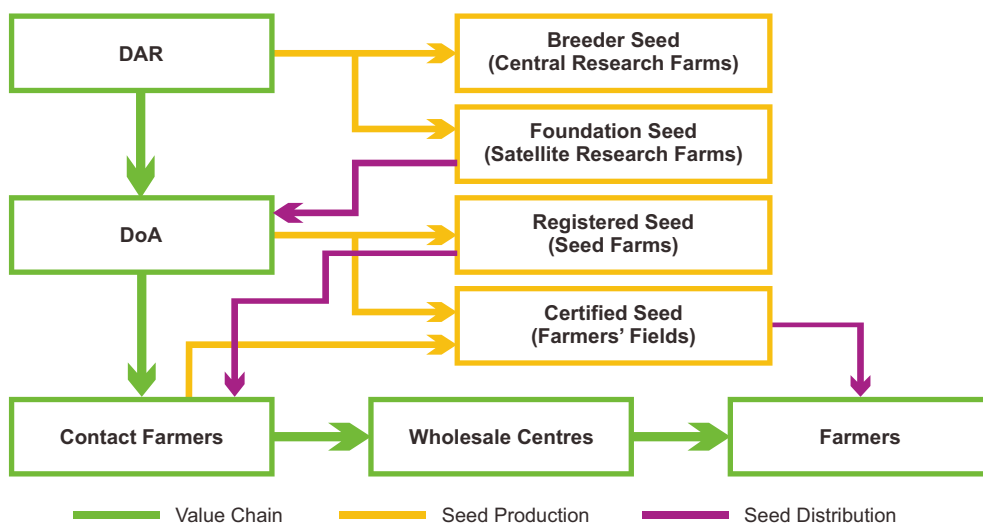
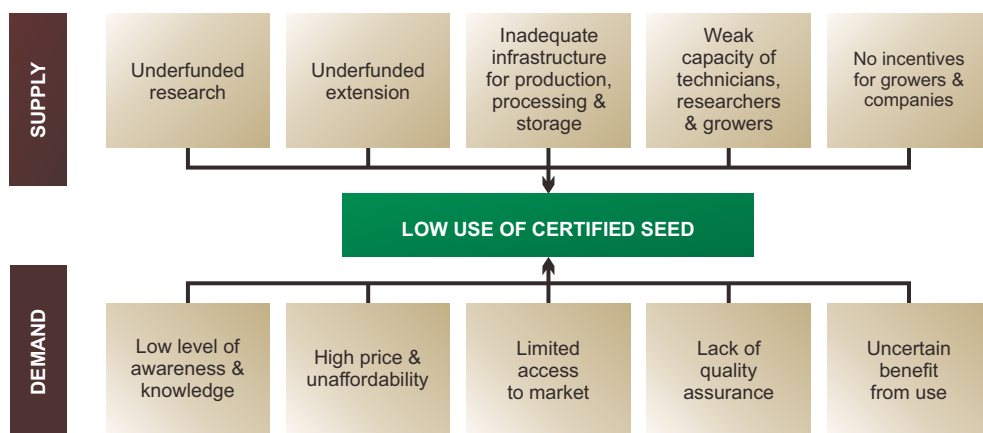


Figure 2. Demand and supply side perspectives for low use of certified seed



Source: Aung and Goletti (2015)

years to fully make up for the past neglect and stagnation. Implementation of the Seed Law (2011) has been slow; it was only ratified in February 2016. Many companies are still unaware of the rules and regulations, since they were not consulted during drafting and because the education and awareness programme of concerned state agency is weak. However, as the country continues on its path of greater liberalization, the public sector still has an important role in improving agriculture and supporting a seed system led by the private sector.

Table 2 presents the results of a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis to examine the extent to which current policies, institutions and processes for development of the seed sector are helping to address the

challenges facing important Dry Zone crops, i.e. pulses, legumes and oil crops.

6. Key policy recommendations

Policies

1. Formulate and adopt a national seed policy with the support of national and international experts to assist the implementation of the Seed Law (2011). The national seed policy should facilitate the development of an efficient and competitive seed value chain which meets the needs of all stakeholders.
2. Encourage community-based farmers' seed banks and promote the seed value chain through private sector development and public-private partnerships (PPPs).

Table 2. SWOT analysis of policies, institutions and processes governing the seed value chain of pulses, legumes and oil crops in the Dry Zone of Myanmar

Strengths	Weaknesses
<p><u>Policies</u></p> <ul style="list-style-type: none"> ■ Strong political will for agricultural development to improve rural livelihoods ■ Varietal improvement designated as a priority in the agriculture sector development policy ■ Procedures and regulations to implement the Seed Law (2011) were ratified in February 2016 ■ Draft Plant Variety Protection Law has been submitted to Parliament and is awaiting approval 	<p><u>Policies</u></p> <ul style="list-style-type: none"> ■ Lack of a national seed policy ■ Policy focus is mainly on rice, maize and vegetables and there is lack of emphasis on diversification ■ Lack of incentives for the private sector to increase investment in the seed industry
<p><u>Institutions</u></p> <ul style="list-style-type: none"> ■ Existing network of research and seed production institutions (24 research stations and 32 seed farms) ■ National Seed Committee has been formed and is functioning in accordance with the Seed Law ■ Plant genetic resources are stored in seed banks ■ Certified seed production and distribution initiated in the field in the form of farmers' seed banks in Dry Zone areas 	<p><u>Institutions</u></p> <ul style="list-style-type: none"> ■ Insufficient government budget for R&D ■ Limited technical skills and capacity of research and extension staff ■ Weakness in coordination among institutions (central as well as regional) ■ Lack of budget allotment for seed procurement in Agriculture Extension Division (AED) ■ Lack of seed grower associations at central and regional levels
<p><u>Processes</u></p> <ul style="list-style-type: none"> ■ Supply chain is in place involving public, private and farmer stakeholders ■ Private sector is involved in distribution and marketing of the seed ■ Contract farming system is functioning well for seed production for rice crops in the delta region which can provide a basis for further expansion in the Dry Zone 	<p><u>Processes</u></p> <ul style="list-style-type: none"> ■ Insufficient infrastructure development in public sector for seed production ■ Poor facilities for seed quality control or availability of seed testing laboratories at both central and regional levels ■ Lack of mechanisms to address weaknesses in farmers' and private sector's awareness of Seed Law and regulations ■ Poor availability of market information on seed ■ Weaknesses in training and education on seed production techniques for farmers
Opportunities	Threats
<p><u>Policies</u></p> <ul style="list-style-type: none"> ■ Encouraging opportunities for public-private partnerships in the seed sector and significant scope for improvement ■ Foreign investment in seed industry is being initiated 	<p><u>Policies</u></p> <ul style="list-style-type: none"> ■ Cultivated land area is declining due to industrialization ■ Illegal and informal border trade with neighbouring countries, such as China and Thailand
<p><u>Institutions</u></p> <ul style="list-style-type: none"> ■ Potential for cooperation with international research institutions 	<p><u>Institutions</u></p> <ul style="list-style-type: none"> ■ Lack of seed authority in states and regions may delay seed registration, production and marketing at farm level
<p><u>Processes</u></p> <ul style="list-style-type: none"> ■ Significant opportunities for further increase of private investment in seed production; currently most activities related to seed production and distributions are handled by DAR and DoA ■ Private companies are investing in paddy, maize, vegetable seed production through contract farming with farmers in some areas with potential for greater coverage ■ Scope for increasing farmers' participation in policy processes to improve crop productivity and quality ■ Increasing demand for certified seeds 	<p><u>Processes</u></p> <ul style="list-style-type: none"> ■ Weaknesses in quarantine procedures in importing seed and plant parts across the border ■ Missing role of services sector in prevention and control of incidence of pests and diseases

3. Design and implement a new seed value chain development programme.
4. Collaborate with international research institutes to establish seed standards.
5. Ensure border crossing control and proper quarantine procedures to avoid illegal import or export of seeds and planting material.
6. Improve the Foreign Investment Law to increase private sector investment.

Institutions

1. Among MoALI departments, the SD of DoA in cooperation with DAR and AED should formulate a seed flow programme with regular supply of first generation certified seed to the farmers.
2. MoALI should lead participatory policy formulation and programme setting while state and regional ministries should have the authority to implement the programmes and oversee governance of the activities.
3. Set up a joint venture arrangement between the public and private sector for seed production.
4. Strengthen research collaboration between DAR and international research institutes, such as the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) to produce modern varieties of arid and semi-tropical crops such as peas and beans, sesame and groundnut that are resilient to effects of climate change.
5. Establish a 'Myanmar Seed Industry Association' to support the development of seed grower associations and facilitate linkages between public institutions.
6. Upgrade and modernize technical skills and techniques to establish a seed quality assurance system and a monitoring and inspection system to improve seed quality.
7. Establish a seed certification body in each state and region.
8. Establish a system to produce reliable statistics and marketing information related to seed supply, distribution and seed demand by farmers.

Policy processes

1. Introduce policy reforms promoting a shift from the current top-down structure of decision-making to a bottom-up approach in order to

incorporate grass-roots and public sector views.

2. Promote transparent and simplified administrative procedures for a quality seed certification system.
3. Improve the extension system, providing training, demonstrations and awareness services on the Seed Law and certified seed production to farmers.
4. Increase financial support to research for improving capacity in crop breeding.
5. Improve government seed farm facilities and the capacity/skills of the staff.
6. Arrange regular meetings between research seed farms and agriculture education agencies.
7. Upgrade seed laboratories at both central and regional levels.
8. Establish mobile seed processing plants in states and regions, and provide services to seed growers.
9. Encourage private sector involvement in establishing seed-testing laboratories, providing tax holidays and relaxing duties on importation of laboratory apparatus.
10. Set up a systematic recording system on seed distribution in order to monitor seed flow, multiplication and redistribution taking place between farmers. This is important to track genetic purity and facilitate the replacement of distributed seed every 3 years to avoid seed degeneration.
11. Establish a mechanism to receive feedback on the Seed Law and procedures from the private sector and create more platforms to facilitate communication and collaboration between policymakers and private sector. The new Seed Law also encourages more active engagement of private sector in seed production.

Selected references

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