Agro-Input Supply Sector Review with focus on Southern Shan State

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Acronyms

EU	European Union
GAP	Good Agricultural Practices
GTSP	Granulated Triple Super Phosphate
GSSP	Granulated Single Super Phosphate
LIFT	Livelihoods and Food Security Trust Fund
MADB	Myanmar Agricultural Development Bank
MFI	Micro Finance Institution
MOAI	Ministry of Agriculture and Irrigation
NAIS	National Association of Input Suppliers
NGO	Non-governmental Organization
PPD	Plant Protection Division
R&D	Research and Development
SMI	Small and Medium Industry
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TPA	Terra People Association

Executive Summary

Liberalization of input supply and agricultural markets has promoted growth of the agro-inputs industry in Myanmar. Issues of availability of inputs are largely resolved. However, the government's lack of capacity to enforce the law has permitted an unprecedented growth in illegal inputs through cross-border trade. This competes with the formal sector, as illegal products are cheaper, and increases the risk of unregulated, harmful chemicals entering the food chain.

Myanmar's inputs sector is highly concentrated at the national level—the top three input-supply companies hold more than 60% of the market share for legal products. These companies are wholesalers that do not sell directly to farmers. They supply independent, relatively small township-level dealers (retail shops). (Burma's states and regions are divided into districts, which are subdivided into townships, then towns, wards, and villages.) Township dealers sell directly to farmers or to sub-dealers who have small shops in neighboring villages.

National companies also employ sales agents who work in townships and villages, but their objective is to promote company products. They run de facto advertising campaigns for the companies, which may involve practical demonstrations and engagement with lead farmers.

Retailers describe small-scale farmers as cash-poor and risk averse. They resist brand substitution for fear of losses and don't understand basic agricultural science, chemically active ingredients, quality characteristics, safe use, or risks. Price determines their product selection, but sales agents from the dominant national companies servicing the area have the most influence over these farmers.

Company agents are the primary sources of technical advice to farmers, but their information is limited to company products. Retailers of both legal and illegal products are the other source of information. Both channels provide information of variable quality, and focus mostly on indications and quantities of use, often neglecting issues of health and safety in application and food safety.

A national level and Southern Shan State analysis shows that farmers' technical knowledge of input use is largely nonexistent. This report recommends that the Value Chains for Rural Development project (hereafter referred to as "Value Chains") should engage with the input-supply sector to improve technical knowledge and lead awareness-raising campaigns on inputs application safety for farmers as well as food safety issues (as related to inputs use) for consumers. In implementing such interventions, the project would need to assess strategic points of intervention to effect systematic long-term change, engaging with both market leaders and donor networks.

This report is based on a review of available literature to provide an in-depth examination of sector regulations, key players, and structure. It incorporates interviews with national and local market leaders, industry and producer associations, and government and donor representatives involved in agricultural development.

1 Objective

To assess the organization and performance of the agro-input supply sector nationally and in Southern Shan in terms of inputs accessibility, affordability, quality, and support services of financing and agricultural technical advice.

2 Methodology

Research included desktop review and direct research using industry and marketing analyses. It included a review of "Making Markets Work for the Poor "(M4P) techniques that include issues of central importance to smallholder farmers, both on a national level and in Southern Shan. Researchers interviewed key stakeholders at the national level, first, which led to identification of local stakeholders (in Southern Shan) for subsequent interviews.

2.1 Tools

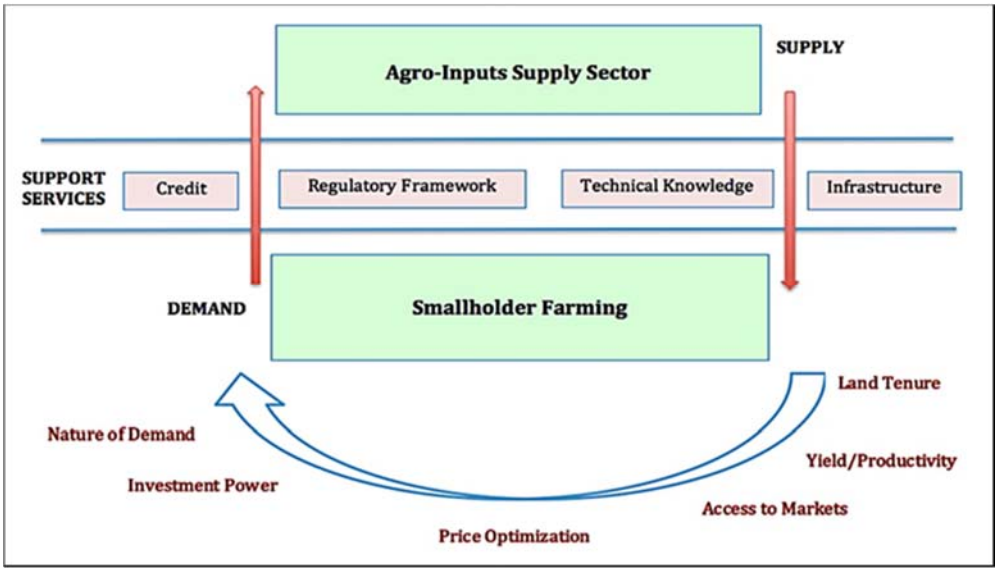
- Literature review
- Key informant interviews with private sector, donor agencies, government, and non-governmental organizations (NGOs), and national and local community-based organizations.
- Strengths, weaknesses, opportunities, threats (SWOT) analysis of the agro-input sector's ability to meet small farmers' needs.

2.2 Structure of the Sector Review

Supply of agricultural inputs is influenced by credit availability; the regulatory framework; agricultural technical knowledge, research and development (R&D), and extension; and rural infrastructure. Demand for agricultural inputs shapes supply and is influenced by land tenure, yield levels, access to markets and price, investment or purchase power, and informed choices in making input purchases. Demand is largely based on the needs of smallholders, who comprise the majority of Myanmar's farming community. This assessment considers these factors and determines the extent to which they promote or hamper input supply development nationally and in southern Shan.

See **Figure 1** for the theoretical framework and structure of this review.

Figure 1. Agro-inputs supply sector environment



3 National Overview

3.1 Sector Context

Agriculture accounts for 40% of Myanmar's gross domestic product (GDP), 70% of employment, and 25% to 30% of exports by value. Its importance may be even greater, however, because 30% of the rural population is landless, with reliance on agricultural work. Trends for the sector are linked to development of the food

crop subsector, which on its own, makes up 80% of the total value of sector production (Ministry of Agriculture and Irrigation 2011).

The government therefore sees agricultural development as one of the driving forces of the economy and a necessity for development to lift the majority of Myanmar's population out of poverty. The agriculture sector is expected to provide food security, increase foreign exchange earnings through exports, and promote socioeconomic development in rural areas.

The agricultural inputs supply sector plays a major role in promoting agricultural development, and major policy reforms and measures affecting the sector have been put in place to stimulate its growth. These include a plant pest quarantine law in 1990, a pesticides law in 1993, and a fertilizer law in 2000, as well as the abolition of rice production quotas, construction of new irrigation systems, and provision of pumping equipment to farmers.

In 2003, the government permitted the private sector to import and trade agricultural chemicals and fertilizers, and liberalized domestic and international marketing of rice. The following year, it extended the same liberalization to most industrial crops.

The priority and growth of agriculture, together with trade liberalization, has stimulated expansion of the input supply sector and the emergence of a private sector with industry leaders and a distribution network to serve growing farmer demand for agricultural inputs.

3.2 Sub-Sectors and Key Players

The agro-input supply sector is divided into sub-sectors.

- Seeds
- Agrochemicals
- Organic farming
- Machinery (production, packaging, and processing)

Of the four sub-sectors, the agrochemical group has, by far, the largest share of the market in terms of sales; organic farming products has the smallest. A number of firms specialize in each sub-sector. Some supply a range of inputs across sub-sectors, including seeds and agrochemicals. Specialized companies generally sell machinery. Central wholesale supplier companies are at the pinnacle of the sector.

3.2.1 Seeds

Private sector seed production is dominated by a few large companies that produce and sell their own registered seed varieties, focusing on hybrid vegetables and fruits, hybrid maize, and rice. The companies distribute seed through their own system of specialized agents and more than 3,000 general agro-dealer shops (Van den Broek 2015). China, Thailand, India, and some European Union (EU) countries offer a large and diverse supply of imported seed.

The primary national seed producers and suppliers identified are CP Worldwide (hybrid corn), East–West Seed Company (vegetable seeds: bitter gourd, cucumber, chili, tomato), Malar Myaing (vegetable seeds), Known You Seed Company (melons, cucumbers), Myat Min (rice), and Genuine Seeds Company (vegetable seeds).

3.2.2 Agrochemicals

This sub-sector includes fertilizer, pesticides, herbicides, fungicides, and other chemicals used in production. Among all types of agrochemicals, fertilizers are by far the most widely used input (Gregory, U Tin Maung Shew, and Naing Oo 2014).

The domestic fertilizer industry produces mainly urea; phosphate and potash are imported. Three urea state-owned plants run by the Myanmar Petrochemical Enterprise built in the 1970s produce 100,000 tons a year, estimated to be less than 25% of their capacity and 17% of domestic requirements (OECD 2014). A few state

enterprises and private companies produce small amounts of compound fertilizer, bio-fertilizer, and foliar fertilizer from imported ingredients. However, despite excess capacity and increasing need, domestic fertilizer production is not growing, because the natural gas needed for its production is being diverted to more profitable exports.

The fertilizer (mainly urea) market is largely dependent on imports, which account for more than 80% of volume sold. Urea comes predominantly from China via the border in Muse in Shan State (Gregory, U Tin Maung Shew and Naing Oo 2014).

Table 1 shows the volume of fertilizer imports. The data show that a much larger volume of urea is imported than other types of fertilizers. The table also reflects the fluctuation of overall volumes of imports in the post-Cyclone Nargis period, illustrating the high risks involved in agriculture and support industries, all of which were dramatically impacted by the natural disaster.

Table 1. Fertilizer imports (tons)

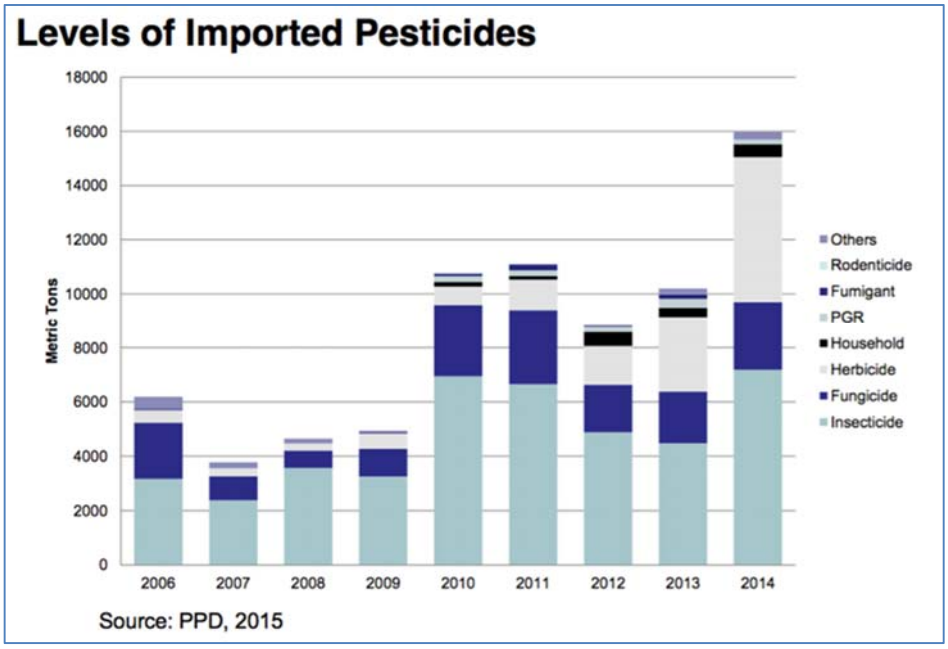
Year	Urea	Ammonum Nitrate	Supper Phosphates or Chemical Fertilizer	Potassium Chhoride	Mineral or Chemical Fertilizer Containg,N,P,K	Anmmonium Sulphate	Other Mineral or Chemical Nitrogenous Fertilizer	Total
2004-2005	11,239	0	0	0	23	0	694	11.956
2005-2006	731	0	5,999	0	11,794	490	349	19,363
2006-2007	8,172	0	40	20	38,691	2,850	4,914	54,687
2007-2008	1,742	0	72	155	27,311	938	3,468	33,686
2008-2009	881	0	21	3	3,542	0	2,258	6,705
2009-2010	14,823	120	250	603	11,884	880	700	29,260

Source: Myanmar Agricultural Statsistics, 2011

Source Sanyu Consultants Inc. 2013

Figure 2 shows the levels of imported pesticides, which are predictably lower than imported fertilizers. Insecticides are the most widely imported, followed by herbicides.

Figure 2. Levels of imported pesticides



Source: Gillespie 2015

A large variety of agrochemicals are registered for import. For pesticides alone, there are more than 30 registered importers, 550 formulations, and 1,460 brands on the market (Gillespie 2015). The top agrochemical importers by volume are Myanmar Awba, JDS/Diamond Star (ARMO), Farm Link/Golden Lion, Zebra General/Golden Key, and Wisarra.

The market leader is Myanmar Awba Group, established in 1995. It imports and trades in fertilizers, agricultural chemicals, herbicides, seed, and livestock feeds. It imports agricultural chemicals mainly from India, China, Japan, and the EU. It has a network of 1,100 sales staff, 30 wholesale points in townships, and 500 agricultural experts who cover the entire country and advise farmers on product use.

3.2.3 Organic Farming

With the exception of a few small- to medium-sized enterprises involved in mango, tea, and coffee production for export, there is no internationally certified organic farming in Myanmar. The term "organic" is not a preserved label, and producers who use the label adhere more closely to good agricultural practices (GAP). There is a National Organic Agriculture Group, but it has no international endorsement and is only recognized inside the country, giving limited competitive advantage to those who apply for it.

Organic farming inputs is a niche market. Local markets do not have the technical knowledge or finances to support organic production. National urban markets are still in their infancy, with six small to medium organic retailers in Yangon as of the time of this report.

Some specialized companies provide a mix of imported and manufactured inputs, primarily organic fertilizers, pesticides, and herbicides. The top three are BioSupreme, Jacugo (authorized Effective Micro-organisms distributor), and Shan Maw Myae (EcoStar brand).

BioSupreme leads the market in sales. It focuses on supplying organic manure. The other companies offer a range of products, such as fertilizers, pesticides, and herbicides, carried by general retailers around the country or smaller specialized shops. However, the cost of high-quality organic inputs is generally higher than for chemical alternatives, their application is more complex and requires long-term commitment. Demand for organic products among farmers remains very low.

3.2.4 Machinery

In Myanmar, agricultural mechanization is slow because farms are relatively small, the rural road network is underdeveloped, and financial constraints prevent farmers from investing in agricultural machinery.

However, the Ministry of Agriculture and Irrigation (MOAI) has expanded land under agricultural production and is promoting mechanization, and farm machinery use is on the rise. In addition, the combined cost of hired and family labor is 37% to 65% of total production costs, which stimulates mechanization, particularly among medium and large farmers whose farms are larger than 2 hectares (Gregory, U Tin Maung Shew and Naing Oo 2014).

The MOAI's 30-year Master Plan calls for mechanizing 63% of agriculture by 2030. Domestic production of farm equipment does not currently meet the demand. Most machines in use in Myanmar are imported from China and Thailand. From 1995 through 2011, the number of power tillers increased from 9,900 to 188,500 and water pumps increased from 107,800 to 178,424. Until 2012, the Ministry of Industry was producing agricultural machinery, including power tillers, reapers, threshers, trailers, and machine parts. Its Agricultural Mechanization Department managed 99 tractor stations (retail outlets), five farm machinery factories, and a farm machinery plant. In 2013, these were handed over to the Ministry of Industry and the private sector (OECD 2014). Some private–public sector activities have encouraged mechanization on medium- and large-scale farms, such as the 23 model mechanized villages established across the country to demonstrate the benefits of farm mechanization (Sanyu Consultants, Inc. 2013). However, these practices are out of reach for most smallholders.

Farmers, especially smallholders, are not well enough organized, yet, to purchase farm machinery for joint use. In addition to the difficulties of obtaining financing for the large investment required for mechanization, dealers do not commonly supply spare parts or maintenance services (Sanyu Consultants Inc., 2013).

The main suppliers of agricultural machinery are Yee Shin, Good Brother, Tharaphu U Soe Myint, Win Shwe War, and Aharthit.

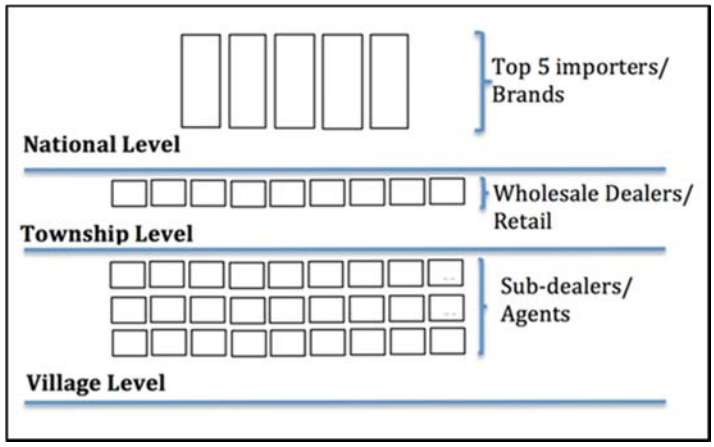
3.3 Governance: Coordination, Regulation, and Control

Myanmar has an open, competitive agricultural input supply market, largely dominated by national companies.

3.3.1 Sector Coordination

The agro-input supply sector is highly concentrated and coordinated at the top. It is increasingly competitive and uncoordinated toward the bottom (see Figure 3). A limited number of large companies dominate the import, repackaging, and wholesale distribution of regulated products but do not engage in retail. They provide the bulk of regulated inputs to the lower-level dealers and retailers, who sell to farmers. At township and village levels there are two distributing systems: the sales extension system (agents who work for the big companies and promote company products) and the retail network of the big companies' dealers and sub-dealers, who handle commercial distribution of all inputs. Private concentration in the sector is estimated to have surpassed 92% in 2010 (Yu Lwin, et al. 2013).

Figure 3. Agro-input supply private sector structure



The private sector fertilizer market exemplifies the structure and coordination of the overall agrochemicals market. It is highly competitive, with 270 registered fertilizer importers and distributors. Of those, 80 account for an estimated 90% of fertilizer imports. The rest are general traders who import fertilizer for resale (Gregory, U Tin Maung Shew and Naing Oo 2014). Company structures are similar and hierarchical, with head offices and decision-making based in Yangon.

In 2006, the industry founded the Myanmar Fertilizer, Seed, and Pesticide Entrepreneurs Association, which began with 20 corporate members and has grown to 70. Its objectives are:

1. Educating farmers on safe, sensible, and effective use of inputs through research and development
2. Working closely with regulatory authorities to improve registration standards
3. Conducting public relations on behalf of the industry
4. Collaborating with local, Association of Southeast Asian Nations, and international associations
5. Monitoring quality, price, demand, and distribution
6. Maintaining a market and trade database
7. Offering networking, collaboration, and information sharing for members.

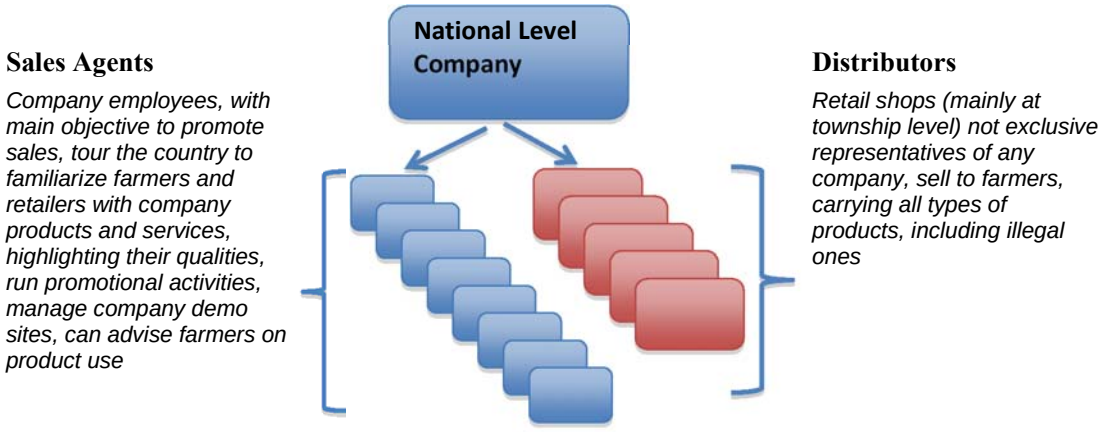
Awba company chairman Thadoe Hein is president of the Association. The management committee is composed of 12 companies (see **Table 2**).

Table 2. Myanmar Fertilizer, Seed, and Pesticide Entrepreneurs Association

	Company	Fertilizer	Seed	Pesticides
1	Myanmar Awba Group	O	O	O
2	Golden Lion	O		O
3	Diamond Star	O		O
4	Mar Lar Myaing	O	O	O
5	Golden Key	O		O
6	Su San	O		
7	Sin Shwe Li		O	
8	Agrobio		O	O
9	Arysta			O
10	Forward			O
11	Supreme Biotech	O		
12	Asiatic			O

Awba, alone, holds about 40% of the market share. Together with Diamond Star and Golden Lion (the second and third-largest companies), these three companies control more than 60% of the market. The companies import and produce regulated inputs and have a network of advertising agents who promote their products throughout the country. However, they have no retail outlets. Their products are supplied to farmers by township and village retailers. Retail distributors do not work exclusively for one company, offering many competing brands.

Figure 4. Different types of outreach to farmer via the private sector



The Association has subcommittees on pesticides, fertilizers, seeds, organics, and international relations. Agricultural machinery is not part of the Association.

The Association is national in scope; there is no formal organization of agro-input retail distributors in districts and townships. Currently, the Association is facing challenges with lower level distribution networks over infiltration of illegal products into shops in the countryside. These illegal products represent significant market competition for established, regulated brands.

Dealers and sub-dealers are the interface between suppliers and farmers. Currently, there are 3,093 registered fertilizer dealers nationwide (2014), almost double the number reported three years earlier. This

reflects both real growth and an increase in the rate at which dealers are licensed over the past few years. Most independent dealers own small shops with limited storage capacity. They resell fertilizer, pesticides, and, where appropriate, vegetable and other crop seeds. Their financial and fertilizer knowledge is limited. Many are supported by large fertilizer companies either financially through commissions on sales, or through service (agronomic) advice and field demonstrations (Gregory, U Tin Maung Shew and Naing Oo 2014).

Agro-input products change hands on average three to four times from the moment they are registered and imported to the final point of sale. With each resale from an import company to local retail companies, information on product use and safety requirements becomes diluted and responsibility for the effects of product use is lost.

The agricultural machinery market is less developed than the other sub-sectors, due to the higher cost of products. However, even small townships and villages have dealers that sell gasoline and diesel engines of diverse brands and prices. Secondhand and repair shops also provide opportunities for farmers to purchase engines at lower cost.

3.3.2 Policies, Rules, and Regulations

Investment in agriculture generally relies on an integrated policy environment where a range of sector policies contributes to a sound investment climate. Agricultural investment is limited by uncertain land tenure rights, high costs of finance, and low social returns due to weak infrastructure and labor constraints (OECD 2014). These factors, together with the regulatory environment for agro-inputs, shape sector growth, product development, and service to clients.

The overarching policy that sets the scene for investment in the agro-input sector is the 20-Year Development Plan in Agriculture Sector (2011 to 2031). The plan lays the groundwork for policies that shape the sector and development prospects. Agricultural input policies are designed to promote regulation of quality and price, and to ensure distribution of registered, safe products. For example, there is a policy on high yield and quality seeds production and distribution. One of its main objectives is to encourage the private sector to cooperate with the government and invest in quality seed production. Another is to strengthen links between quality seed production and marketing. It also includes policies on improving market access and stimulating mechanization (Sanyu Consultants Inc. 2013).

The legal framework for agriculture, input supply, and foreign investment is in place, and in the last few years, the policies have been renegotiated and updated.

Legislation

The Seed Law 2011 (January 7, 2011) enacted important conditions and requirements for variety registration, quality assurance, and seed sales in the country. It introduced:

- The opportunity for seed companies to establish their own seed testing facilities with government certification
- Specifications for seed labeling, including trademark, variety name, weight and volume of seed, quality of seed, instructions for use, date of expiry, number and date of license, and warranty for seed quality
- Two committees—the national seed and technical seed committees.

The national committee is a coordinating body, providing guidance to the seed sector through policy directives, regulations for quality assurance and variety release, strategies for research, and seed chain coordination. It also approves release of new varieties, registers testing laboratories, and determines the composition of the technical seed committee.

The technical committee prepares reports and recommendations on the release of new varieties (variety trial reports), and registers seed businesses and seed testing laboratories. Myanmar has since developed a new seed policy (2013) with draft laws on biological safety and plant varietal protection (Oo and Shwe 2013).

To regulate agrochemical imports, distribution, and use, the government enacted the Pesticide Law 1990 in line with the United Nation's Food and Agriculture Organization guidelines. In 1992, (through Notification No. 2/92), the government formed the Pesticide Regulation Board to handle pesticide registration (Myint 2005). In 1991, Notification No. 4/91 on procedures for Pesticide Law 1990 sets out guidelines for pesticide labeling, preparation of bio-efficacy test protocols, and safety for pesticide formulation, repackaging, and storage. These guidelines are currently under review. The government expects to enact updates.

Fertilizer supply and trade is regulated by the Fertilizer Law of October 1, 2002. It covers management of fertilizer use, production, and distribution. The law has three main requirements—registration of fertilizer products, registration of businesses that import, manufacture, or distribute fertilizer, and licensing of businesses that mix, package, or sell fertilizer. Active ingredients and instructions on application and safety must be clearly described in Myanmar language on the product. This is not always fully observed, however.

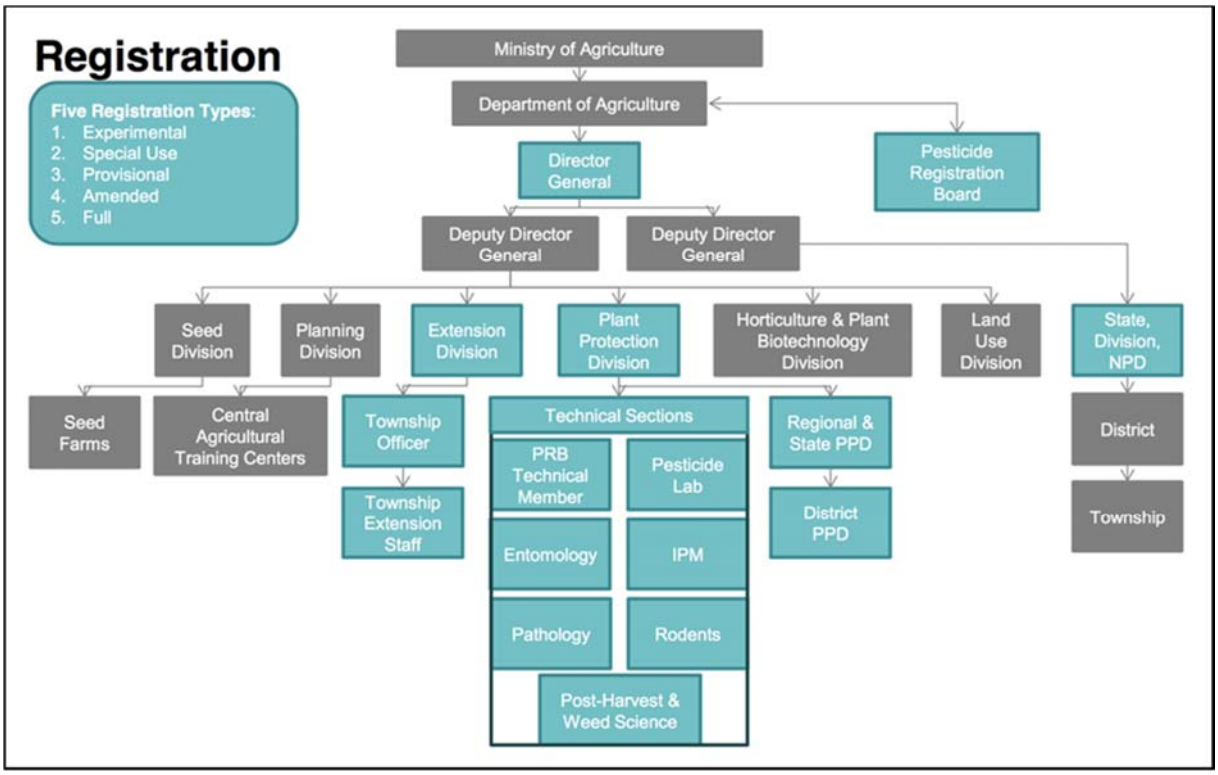
Specifications for organic fertilizers do not meet international norms. Technical requirements require that organic fertilizer must contain a minimum of 3% of each of the major nutrients (N, P2O5, and K2O) and a minimum of 30% organic matter. This definition permits adulteration, such as adding chemical fertilizers to raise the nutrient content or adding inert material to increase volume. Additionally, there are no restrictions on toxic material content (Gregory, U Tin Maung Shew and Naing Oo 2014).

Despite the opening of the markets, the expansion of available products, and the growth of the sector, many private sector companies are dissatisfied with legal and regulatory implementation of product registration and imports. They find the system of input registration for seeds and agrochemicals inefficient, with unclear, centralized procedures and highly concentrated decision-making, which is open to exploitation and bribery. This stifles growth, making it harder for smaller businesses to emerge unless they have appropriate connections and the backing of officials who will help with government licensing. Shortcomings highlighted by some agro-input suppliers include the one-year requirement for testing and registering new varieties, because it disables market response. The requirement for seed registration applies even when the product is purchased solely for re-export. Registration requirements for agrochemicals inhibit business response to client needs, because different sizes of packaging require separate import registration.

Institutional Organization for Agrochemical Registration

Because the agro-input sector is linked to agricultural production, its regulation is almost exclusively the responsibility of the Department of Agriculture. Figure 5 is an organogram of the Ministry of Agriculture, which includes the Plant Protection Division (PPD), the Pesticide Regulation Board, and the Seed and Extension divisions.

Figure 5. Institutional Organization for Agrochemical Registration



The Seed Division is responsible for launching and registering seed production across a range of crops. It runs 22 seed farms and the Myanmar Rice Research Centre. Of the division's $2,308,905 budget in 2013–14, it earmarked only $69,640 for research, and spent the remainder on producing existing varieties and on operations (OECD 2014). The Department of Agricultural Research and the Seed Division does very little work on crops other than rice, either in terms of production or in testing acceptability and local adaptability.

The Fertilizer Law established a fertilizer committee, chaired by the deputy minister of the MOAI, with the director general as secretary. The committee is responsible for product registration approval, registration of fertilizer business licenses and product import licenses, approval of brand and bag and label specifications, as well as sampling and analysis of fertilizer imports and fertilizer in retail stores.

The law also established a fertilizer technical committee with senior staff from the MOAI, the Department of Agricultural Research, the Department of Agricultural Extension, and the Land Use Division.

The PPD registers agrochemicals available in the country as fit for use. The director general of the division and the deputy minister of agriculture lead the National Committee on Agrochemical Registration, which registers local and overseas products. The PPD is responsible for providing guidance on the registered status of agrochemicals and inspections to ensure the government pesticide policy is followed. At the state, district, and township levels, and especially in the townships, plant protection officers are required to educate the public about this policy. However, there is little evidence of active awareness-building or outreach to teach safe use of agrochemicals at the retail or wholesale level (Nepali 2014).

Government efforts to enforce laws and monitor whether they are followed are insufficient in the areas of Southern Shan surveyed (Nepali 2014). While PPD personnel are aware that the knowledge and skills of farmers using agrochemicals needs to be improved, their efforts are hindered by budget and staffing constraints.

The government does not recognize international testing agency analysis results. This task is delegated to the Land Use Division. However, as with many other departments, financial and human resource constraints limit its ability to perform this function effectively at township wholesale and retail levels.

A further institutional constraint is the limited number of facilities for analysis. Only one fully operational laboratory is available in Yangon; the one in Mandalay awaits new equipment. A new, state-financed laboratory is now open in Karen State on the Thailand border, however there is no laboratory at Muse where most unregulated products cross the border from China (Gregory, U Tin Maung Shew, and Naing Oo 2014). These shortcomings result in limited enforcement, bottlenecks at the laboratories, and an expanding unregulated market.

Regulated vs. Unregulated Product Supply and Markets

The emergence and growth of unregulated or illegal trade in agricultural inputs is arguably one of the most important recent developments in this sector. It blurs the line between legal and illegal businesses, with many entrepreneurs engaging in illegal trade to remain competitive. Since May 2015, the government has responded to increasing pressure to enforce import regulations, and has stepped up its efforts to roll back the supply of illegal products.

A study by Dianna Gillespie in 2015 valued cross-border trade at $3,219 billion, 58% percent of the total (MNPED, 2015). The study found more than 20 main routes and estimated that illegal trade originating in Thailand in 2012 was approximately $85 million to $812 million--much lower than estimates for illegal border trade from China.

Unregulated cross-border trade with China is believed to be the primary source of low-quality, low-price fertilizers on the national market. The porous border, absence of a bi-lateral agreement on quality control and product registration, and weak enforcement of import license rules has resulted in the increase in unregistered and unregulated agricultural inputs. According to the Gillespie study, agrochemicals are the most widely available through illegal channels, followed by fertilizers.

According to input dealers, consumer demand motivates the growth of unregulated trade. Farmers need cheap alternatives and do not differentiate based on quality. Dealers claim that while larger-scale farmers investigate active ingredients before buying products, small farmers' decisions are primarily price-driven—they tend to buy cheaper, unregistered chemicals (Gillespie 2015). Many small farmers generally lack the knowledge to assess various quality or technical specifications.

Suppliers operate by their own rules to determine what, how, and from where they import, price, and distribute products. Two classes of unregulated trade participants have economic incentives to operate outside the law: small operators in the border regions whose agro-input supply business is entirely illegal; and larger, more formal dealers, who conduct part of their business outside the law because the cost of compliance outweighs the benefits.

Dealers and many small farmers in Taunggyi and Nyaung Shwe reported that tomato, potato, and cabbage growers are more likely to use unregulated Chinese chemicals, according to the same study. Both reported they prefer vegetable seeds from Thailand, Taiwan, and Japan.

The PPD has quarantine facilities at some border posts, but the inspection system is inefficient. The Agriculture Department's Land Use Division has the job of combating unregulated product trade, but has no representatives at the border. Control of fertilizers imported from border countries, including Thailand and China, is ineffective. Most smuggled products are labeled only in the language of the country of origin, leading to many allegations of adulteration of the contents and reports that the chemicals have severe negative effects on the environment and human health (Sanyu Consultants Inc. 2013).

Trade regulation is enforced more effectively for agricultural machinery. There is no trade in smuggled goods, because detection is easier. However, most dealers are not representatives of the supplier brands, so there are no warranties or support services for farmers.

3.4 Agro-Input Support Services

The agro-input sector provides services necessary to agricultural market development. This study reviews two types of support services linked to agricultural input supply: credit and financing for agricultural investment; and technical advice on correct agricultural inputs use.

3.4.1 Financing of Agro-inputs

Two factors must be considered when assessing financing for the ago-inputs value chain: 1) accessibility and affordability for farmers; and 2) risk to lenders and borrowers and possible risk mitigation strategies.

Access and Affordability

There is consensus that rural credit available to small farmers is insufficient, owing to the legal and regulatory framework. While agriculture employs 61.2% of the workforce, the agricultural sector accounts for only 1% to 3% of formal bank loans. Most rural households borrow from informal sources, as a Livelihoods and Food Security Trust Fund (LIFT) survey found in 2012.

Of farm households seeking loans, 42% borrowed from family and friends, 31% from moneylenders, and 19% from shopkeepers. However, 48% of landless households relied on family and friends as a source of loans, compared with 21% of households with more than 8 hectares. Households with little or no land also borrowed frequently from shopkeepers. Moneylenders are a common source of financing for households regardless of land area.

More formal lending sources were less common: 16% of households borrowed from microcredit providers, 10% from government, 7% from village savings and loans associations, 2% from farmers associations or cooperatives, and less than 1% from commercial banks (LIFT 2012).

Most farmers, especially small farmers, need seasonal cash loans to invest in production. Financial investment is required to increase the use of agricultural inputs, technology, or production upgrades.

The primary formal financial institution for rural and agricultural credit is the Myanmar Agricultural Development Bank (MADB). Its mission is stated in its law (Article 5)—to "support the development of agriculture, livestock, and rural socioeconomic enterprises in the country by providing banking services."

Despite seasonal loans available for production of eight main crops, the MADB's current lending portfolio focuses heavily on rice production, largely ignoring the rest of the agriculture sector. MADB provides loans to farmers to cover a fraction of the production costs for up to their first 4 hectares. Most of MADB's borrowers are engaged in subsistence agriculture using rudimentary cultivation techniques that do not allow for high yields (Chamberlain, et al. 2014) and (Win 2013). Although the law allows MADB to provide loans for production, processing, storage, distribution, and marketing to agricultural and livestock enterprises, it does not support medium or large-holder farmers engaged in commercial agriculture or other agribusiness firms, traders, exporters, or other firms along the entire value chain.

When its clients grow and diversify, MADB ceases to provide loans. For seasonal loans, farmers must form 5 to 10 member groups and accept liability for their individual loan and other group members' loans. No other collateral is necessary. Term loans are available for larger coffee farmers who need to buy machinery, however they are limited. Finally, MADB does not finance the production of fruits and other vegetables, which have a higher value in the marketplace (Chamberlain, et al. 2014) and (Win 2013).

The micro-finance institutions (MFI) sector is in an embryonic stage with very limited MFIs and limited capital. The new microfinance law is expected to help fill the gap. The most notable presence is the NGO Pact, which has relatively extensive rural reach and provides agricultural loans.

Informal moneylenders help to fill the void created by MADB's seasonal credit and the (until recent) ban on private bank lending to farmers. Although a growing number of informal lenders serve farmers, they have limited capital, resulting in demand for credit in the agriculture sector remaining largely unmet. Informal lenders usually offer a monthly interest rate of 6% to 10%, but can charge as much as 20% per month, or

72% to 100% per year, which many clients are unable to repay. Fertilizer dealers often charge 4% to 6% a month and wealthier villagers or townspeople charge 10% a month. Pawnshops charge 5% a month with collateral. Many small farmers borrow from MADB to roll over debt or pay off high-interest loans from informal lenders (World Bank Group and LIFT 2013) and (OECD 2014).

Agricultural companies offer modest amounts of input credit to some 1.5 million farmers to help manage crop risks (Chamberlain, et al. 2014). For example, some of the largest companies, such as Awba, offer financial instruments to address the gap in financial services. Their loans tend to be short-term with a 3% interest rate. The loan amount is linked to farm size. Repayment is in cash or commodities. However, these services are not available across the country. For example, the company does not make loans in regions such as the Ayeryawaddy Delta, where the perceived environmental risk is high (Sanyu Consultants Inc. 2013).

Golden Key created a micro-finance company that offers rural credit for all customers, with particular attention to farmers. This company has four branches around the country, but none in Southern Shan.

Other large companies, such as Diamond Star and most other distributors interviewed in Southern Shan, limit financial services to large retail clients because farmers are high-risk borrowers. Retail lenders with lower financial capacity most often offer loans to farmers.

Contract-farming arrangements are beginning to emerge. For example, the government-dominated Myanmar Rice Specialized Companies established contract farming for paddy production in designated areas after Cyclone Nargis. Companies provide seasonal loans and inputs to farmers who pay back in kind at prevailing market prices. In some cases, farmers benefit from a guaranteed market and access to inputs and credit. However, they may be forced to sell their crops at harvest when prices are low to pay off their loans. Contract farming is most common in central Myanmar, in the delta region and Shan State, linked mainly to corn feed for CP Company.

Cooperative societies play an important role in extending credit to farmers. In 2009–10, 7,907 cooperative societies were registered across the country with 951,971 members. In 2003–04 their liabilities were $3.2 million, working capital was $9.5 million and net profit was $110,000. By 2009–10, liabilities totaled $13.7 million, working capital reached $28.8 million, and net profit was $370,000 (OECD 2014).

Many arrangements do not favor the farmer. Lenders expect repayment at harvest, so farmers must sell at the lowest market price. In some cases, the creditor sets the buying price.

Risk

Lending to poor rural households and smallholder farms is very risky. Smallholders generally depend on agriculture, with limited alternative livelihoods, making them vulnerable to environmental and economic change. No insurance is available for agricultural loans.

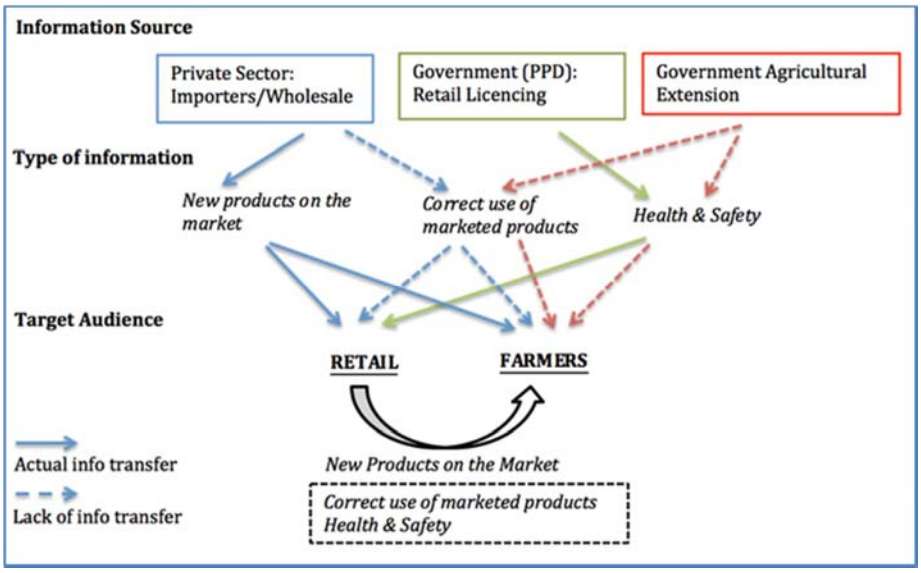
Farm yield is central to determine if debt levels are a problem. In a low-yield scenario, current debt levels are an issue for many farmers (Chamberlain, et al. 2014). At higher yields, debt remains a problem for farmers working plots smaller than 2.4 hectares. Regulated borrowing correlates with plot size. Almost a quarter of farmers with plots smaller than .8 hectares and 54% of farmers working plots 4 hectares or larger have regulated credit.

In order to increase farm yields and product value, and to reduce risk of loan default, improvements to productivity and market links are as important as increasing credit.

3.4.2 Production Development and Support Upgrades

Agricultural extension and technical information on agricultural inputs use are limited. This affects product demand and the entire supply sector. Labeling and retail licensing regulations determine how technical information on product use and safety is disseminated. In practice, the sources, types, and targets of the information are more complex. **Figure 6** summarizes these information flows.

Figure 6. Technical information flows through the sector



The private sector and the government provide technical information to farmers on input use and practices to improve production. Government financial and human resource limitations are the primary shortcoming in the system as they hamper the government's ability to implement technical extension plans.

The PPD licensing process is the most relevant source of technical information and training. All pesticide retailers receive a week of training. Although licenses must be renewed every 3 years, no further training or refresher is offered. The initial course addresses health issues and safe storage and use, but does not cover how to communicate these practices to farmers or stress the importance of technical guidance on the specific use of chemicals and the effects of improper use on human health and food safety.

Retailers are the most influential source of technical information to farmers, and their focus is on promoting new products and increasing sales. Retailers must understand the importance of communicating their technical understanding of the products they sell, including use, and health and safety issues to their clients. Because landowners often buy the products, which are then applied by untrained laborers, retailers need to let clients know how important it is to repeat the information to those who will be using them.

Nearly all dealers said they need more training on fertilizer products and their efficient use, and that farmers need more training, according to a 2014 study by Gregory, U Tin Maung Shew and Naing Oo. Larger dealers reported that they get technical support from the larger fertilizer companies, but most small dealers and sub-dealers do not. Lack of enforcement of labeling requirements, another potential source of information, undermines farmers' ability to self-inform or supplement dealers' information.

Farmers primarily learn about new product availability and substitutes, not the correct use and safe practices for application or product and food safety. This is primarily because suppliers receive inadequate training and there is a conflict of interest between sales and best practices. The average fertilizer retail markup is as low as 2% to 3% (typical retail markup is 5%), according to Gregory, UI Tin Maung Shew and Naing Oo's 2014 study. Therefore, sales volume is paramount to profits. Informing farmers about restricted and responsible or correct use of products does not promote higher sales.

Figure 6 shows the regulated agricultural inputs trade, which accounts for less than half the volume of inputs used. Improving communication there only addresses half the transactions, although many retailers sell regulated and unregulated products, so there is an opportunity for buyers to get information on both types of products. This could also be an opportunity for traders to compare the pros and cons of consumer choices.

Agrochemical market leader Awba shows clear understanding of the importance of providing technical support and information to farmers. The company soon plans to launch a smartphone application to provide

agricultural extension advice by improving problem identification (using picture recognition technology) paired with technical advice recommending the appropriate chemical treatment. The company claims its advice will cover the active ingredient needed to address the problem, and not be limited to recommending specific Awba products. The Farmer Journal and Mercy Corps in Southern Shan both support this initiative.

3.5 Smallholder Demand for Inputs

Famers can invest to intensify production if they are linked to markets and can produce at a profit, which requires efficient investment practices and good output market prices. Small farmers have limited ability to control production costs and maximize market profits.

Because the agriculture sector is dominated by small landholdings, small farmers are the dominant customer group for input supplies. Their purchase decisions are characterized by:

- Minimal knowledge of agriculture practices and production intensification methods
- Uninformed choices of products and active ingredients
- Price-based decision-making
- Risk aversion, translating into slow adoption of new technologies
- High reliance on retail information on options and troubleshooting
- High reliance on informal sources of credit
- High brand loyalty, but limited to logo recognition

This promotes trade in cheap, unregulated, illegal products. The input-supply market therefore focuses on price-cutting competition, undercutting product quality. Lower profit margins for regulated distributors may reduce their ability to invest in support services to farmers. This would have long-term negative effects on input sector development.

3.6 Consumer Demand for Agricultural Production

According to the Myanmar Consumer Union, price determines urban and rural consumers' purchase choices. Consumer awareness of health and safety issues is relatively low. The government has conducted no awareness-raising campaigns on chemical use in agriculture. The market, therefore, is not a force for improving farm products or chemical use. It does not pressure farmers to ensure their products are safe. However, the creation of the Myanmar Consumer Union, the proposed Consumer Protection Law (2014), and the Myanmar Consumer Protection Association mark the beginnings of a civil society that can pressure government and businesses to pay attention to consumer protection.

3.7 Strengths, Weaknesses, Opportunities, Threats to Agro-Input Sector

3.7.1 Strengths

The agro-inputs supply sector continues to grow and improve services, an indicator of its many strengths. Availability and supply are key strengths. The range of product lines and prices is increasing. In addition, the sector has good marketing outreach, a wide-reaching distribution network, and a market chain that extends to village retailers and sub-dealerships.

The high level of coordination and concentration at the national level is prerequisite to a coherent private sector-led approach to market improvement through regulation and controls. It also allows for more effective engagement between the sector and third parties, such as donor agencies aiming to assist in agricultural production and development.

3.7.2 Weaknesses

Despite sector growth, the regulatory environment, business culture, and the nature and dynamics of the market reveal shortcomings. The poor quality of imported products is a major issue.

Gregory, U Tin Maung Shew, and Naing Oo's 2014 study reported the following farmer complaints:

- Granulated triple super phosphate (GTSP) mixed with granulated single super phosphate (GSSP[1])
- Improperly labeled bags, particularly Chinese imports, without Myanmar language
- Bags designed to imitate brands (reportedly from small Chinese manufacturers)
- Reused branded bags, such as ARMO
- Fertilizer (particularly organic or underweight bags) adulterated with inert materials

These issues arise because of the absence of legal enforcement, lack of consumer knowledge, and a market that makes purchase decisions based on price alone. Most farmers admitted in field surveys that they don't know if imported or domestic fertilizer has been adulterated unless they buy a brand that sells at a 50% to 100% premium (OECD 2014).

Interviews with retailers and producer associations revealed farmers' lack of trust in the integrity of business practices and the quality of products. This leads to further motivation to buy unregulated alternatives instead of the more expensive regulated ones.

Sector support service for smallholders is another weakness. While Myanmar's fertilizer supply and distribution is open, private, well developed, unsubsidized, and highly competitive, it has little capacity to improve services to farmers. Fertilizer dealers are the link between suppliers and farmers. In Myanmar, most of these dealers are unable to be change agents who identify and try to satisfy their farmer-customers' needs. Reasons for this are largely financial. Low markup compels retailers to increase sales. Intense competition for customers exists at the township level. Credit is expensive or inaccessible. Storage facilities are substandard. In addition, most dealers don't have the technical expertise to advise farmers on effective and efficient product use (Gregory, U Tin Maung Shew and Naing Oo 2014).

The agro-input supply sector, as a whole, does not have a formal, coherent, comprehensive approach to farmer credit. Customers need to borrow money to farm, yet financial support is primarily in the hands of informal moneylenders.

Finally, fragmentation at the local retail level makes it difficult to control, coordinate, change, or improve the services provided by retailers to farmers. This makes it challenging for third parties to engage local retailers in development initiatives or to act as agents of agricultural enhancement.

3.7.3 Opportunities

Despite the challenges, many opportunities lie ahead. Myanmar is improving laws and regulations to enhance the business climate and promote effective delivery of products and services. One example is the Ministry of Commerce's revision of the Small and Medium Industry (SMI) Law in July 2013, which aims to support small-scale agribusiness to enhance international competitiveness. According to the Department of Trade, of 40,000 SMIs in Myanmar, 40% are small-scale agribusinesses, including rice mills and pulse processing (Sanyu Consultants Inc. 2013).

Input suppliers (particularly large companies) could play a significant role in the microcredit sector and improve the quantity, terms, and risk profile of agricultural input credit. An example is Awba's planned investment in a micro-finance program for dealers (Heho Branch to open soon) and a health and life insurance plan for farmers. Both should formalize and improve the local agriculture investment climate. Expanded sector support services will encourage local entrepreneurs to engage in a more formal, regulated business environment, improve the quality of services and products and, ultimately, improve outputs.

Despite liberalization of the agrochemical trade and increased availability and distribution, regional benchmarking reveals that Myanmar's fertilizer use is about 10% of the South Asia regional average and less than 7% that of Vietnam. This is caused primarily by limited access to seasonal credit and adulteration of fertilizers (OECD 2014).

[1] Granulated P fertilizers (GTSP/GSSP): for direct application as well as for use in mixtures and bulk blends.

Improvement in the investment climate could attract multinationals that can promote development of the agricultural sector by providing high-quality inputs for small and large farmers. As the market is liberalized and users are exposed to a wider range of products, buyers will look for higher quality, dependable goods.

3.7.4 Threats

The legal and regulatory environment (inability to enforce laws) is the main threat to agricultural supply companies, followed by agricultural producers' demand for cheap inputs without regard for quality. Insufficient infrastructure, investment, financial services, and technical support also slow development of the input-supply sector.

Infrastructure and Investment

Despite improvements, the agriculture sector remains undercapitalized, reflecting decades of insufficient investment, including in basic infrastructure, such as roads, warehouses, electricity, and irrigation systems. The lack of basic infrastructure not only affects the demand for inputs but also influences the cost of delivering products and services, and ultimately the cost of doing business in the country.

Technical and Knowledge Gaps of Smallholders

Research and extension services are severely lacking. Most agricultural research focuses on increasing production, not on profitability, marketing, or agro-ecological constraints, which would support development of competitive agriculture businesses. As a result, input–output price ratios are unfavorable, a reflection of weaknesses in effectiveness and efficiency of agro-input use, production techniques, and agronomy know-how.

According to a World Bank Group and LIFT study in 2013, the annual income for agriculture workers in Myanmar was $194 in 2012, compared with $6,680 in Malaysia and $706 in Thailand. This limits demand for inputs and forces companies to offer only low-range products.

Smallholders make up the vast majority of farmers in Myanmar. They lack technical knowledge as well as basic money-management skills. For example, a study conducted for the Dutch Ministry of Economic Affairs in 2014 found that most growers did not record spray applications and were unaware of the total cost of pesticides in one growing season, which makes providing agricultural and financial support difficult for input-supply companies.

Limited Agricultural Credit

Table 3 shows that farmers in all but the Dry Zone cite lack of access to credit and affordability of inputs as their main constraints. Unless the issue of rural credit for inputs is addressed, sector growth and the ability to serve farmers will remain limited.

Table 3. Constraints to crop production by region[2]

	Hilly	Dry	Delta and coastal	Giri-affected	Total
Lack of money to buy inputs	43.0	50.0	62.7	65.0	51.0
Lack of or too expensive fertilisers	43.2	45.9	33.5	40.4	42.2
Bad/unreliable weather	27.9	63.3	18.2	28.3	37.6
Lack of or too expensive seeds	18.6	20.4	17.2	19.2	19.0
Crop pests and diseases	16.1	13.8	26	8.8	16.1
Lack of or too expensive local casual labour	10.9	20.3	22.9	5.4	15.1
Lack of household labour	14.7	17.2	8.2	12.1	14.2
Lack of water resources or irrigation infrastructure	15.6	14.7	10.7	12.5	14.2
Lack of or too expensive other tools and equipment	9.9	20.4	14.4	10.8	14.1
Lack of or too expensive pesticides	11.4	17.7	11.3	11.2	13.4
Lack of land	13.8	10.1	12.2	15.0	12.5
Lack of or too expensive draught/mechanical power	5.1	10.0	24.5	7.5	10.0
Low soil fertility/poor soil structure	12.1	8.1	7.5	7.9	9.6
Low crop prices	2.7	6.5	3.4	0.4	3.8
Salinity	0.4	0.5	3.8	19.2	3.2
Lack of knowledge and experience	2.2	3.2	2.5	4.6	2.9
Animal damage	4.6		0.6	0.8	2.1
Not interested/grows enough/too risky to grow more	0.9	0.8	0.3	1.2	0.8
Soil acidity	0.1				0.1
Total number of persons interviewed	**807**	**632**	**319**	**240**	**1 998**

Note: Each person interviewed can select several constraints.
Source: LIFT, 2012.

Source: (OECD 2014)

The inability to obtain affordable financing reduces farmers' ability to buy more inputs and encourages migration to other economic activities. Studies (Gillespie 2015; OECD 2014) claim that lack of credit-linked agricultural insurance has forced farmers to sell land, which increases economic insecurity.

Legal and Regulatory Gaps, Governance Shortcomings

The main threats to improving sector services appear to be legal and regulatory.

Land tenure is insecure for most smallholder farmers for a range of reasons: 1) a long, complex registration process resulting in low land registration; 2) rigid land classifications that do not reflect existing land use; 3) lack of recognition of customary land use rights; 4) weak protection of registered land use rights; 5) inefficient land administration; and 6) active promotion of large-scale land allocations without adequate safeguards (OECD 2014). These issues affect the growth of agricultural production and lower demand for agricultural inputs and investment. Land tenure insecurity also reduces farmers' ability to use formal financial markets and access large investment funds to upgrade production technologies and mechanization. In addition, farm size averages 2.4 hectares of unconsolidated blocks, which is not conducive to mechanization.

A technical report by the Dutch Ministry of Economic Affairs in 2014 highlights the challenges to government capacity to guide the sector:

1. No published quarantine pest list linked to the Plant Health Act
2. No pest risk analysis team or process to establish the status of harmful organisms in Myanmar
3. Submission of phytosanitary certificate based on information of the exporter, not information available at PPD
4. Diagnostic support at a very basic level for three inspection activities—entomology, mycology, and nematology
5. No diagnostic support of virology and bacteriology.

[2] As share of the total number of persons interviews in each region.

These challenges hamper private-sector companies' and farmers' ability to improve agricultural production management effectively and scientifically.

Regulations on seeds and varieties also threaten the ability of the sector to expand (Van den Broek 2015), (Sanyu Consultants Inc. 2013), and (Gillespie 2015). The issues include:

1. Absence of a strong plant variety protection law, which deters private seed companies from investing
2. Large, commercial seed companies' internal quality assurance system, which indicates serious doubt about the quality of certified seed sold in Myanmar
3. Unclear release procedures, including number of trials, locations, and fees
4. Absence of plant pathology tests, post-control trials, and agro-dealer inspections, prompting increased sales of fake or uncertified seeds (and agrochemicals)
5. Limited information on labels about how the seed should be used (agronomic practices, maturation time)
6. Dissemination of approved quality seed deterred by illegal imports of low-quality seeds from borders with China and Thailand
7. Limited attention to quality seed production, quality assurance, or consumer protection.

Constraints to fertilizer product registration include delays in approval of new registrations because committees meet infrequently. One study identified criticism about the need to register each package size for every product (Gregory, U Tin Maung Shew and Naing Oo 2014). Special use permits are intended to alleviate delays, but some companies report conducting trade outside the law to protect their commercial interests and react to market demand.

Constraints to enforcement of laws and regulations are threatening development of the agro-inputs supply sector. Key limitations include shortages of staff and resources, lack of capacity to decentralize, and inadequate coordination between ministries -- for example, between the Agriculture, Trade, Public Health, Environment and Food Safety bureaucracies, all of which play a role in supporting development of the agro-input supply industry.

Competition from Unregulated Trade

Demand based on price alone prompts smallholders to buy unregulated products from across the borders with China and Thailand. This cuts the market share of higher quality, more expensive, legally registered products. In Southern Shan, for example, some unregulated products, such as the Elephant brand, are two to three times cheaper than alternatives such as ARMO.

The growth of unregulated cross-border trade threatens expansion of agro-inputs supply companies that promote quality products and sound agricultural practices. Illegal competition has prompted registered business and suppliers to mix their legal business with illegal activities, supplying both lines of products.

Foreign Currency Exchange Fluctuations

The devaluation of the national currency in the first half of 2015 caused an increase in the price of agricultural inputs, which is hurting trade. For example, fertilizer traders in Southern Shan report an average increase of as much as 500 kyat per pack in July 2015.

4 Presence and Services in Southern Shan State

4.1 Overview of Agro-Input Supply Chain

Southern Shan state has a well-developed, vibrant trade in agricultural inputs. However, at state and township levels, distribution and marketing services are fragmented and dominated by many small retail companies with local business outreach and clients. There is no sector association to unify these businesses or promote a development vision for the industry.

Some input suppliers operating in Southern Shan have dealerships from Mandalay and Yangon districts down to local villages. This means they play multiple roles in the supply chain—as wholesale suppliers, smaller retailers, retailers in townships, and agents who work on commission in villages.

Others operate in townships or villages and purchase products from the nearest larger center to sell to farmers or to smaller suppliers. Shops are concentrated in the townships, though sales depend on production. Vegetable-growing areas tend to use more inputs. Specialization is relative, since farmers in the upland systems of Southern Shan are far from specialized, but make their living by growing a range of crops in a year. Farmers in Aung Ban, for example, may get more of their income from different vegetable crops than farmers in Pindaya, where fruit and a range of field crops comprise a larger proportion of annual income.

According to the Taunggyi district agricultural office, the district's 13 townships have 200 agrochemical shops. An estimated 150 of these are in five townships—Nyaung Shwe, Kalaw, Nyaung Thayar, Pinlong, and Aung Ban. There are more than 80 input sellers in Nyaung Shwe alone. Aung Ban, a large vegetable-growing hinterland, reportedly has 39 input retailers selling chemicals, fertilizers, and a range of mainly vegetable seeds. The average agro-dealer also stocks limited equipment. Hardware stores in townships, towns, and villages stock hand tools; specialized machinery suppliers in major township centers stock mechanized cultivators (Winrock International 2015) and (Nepali 2014).

The main input suppliers in Southern Shan are Diamond Star, Golden Key, Awba, East–West Seed, and CP. Good Brother, New Holland, and Myo Chit sell agricultural machinery.

Only Diamond Star and Golden Key have fertilizer and agrochemical warehouses in the area. Awba has depots in Mandalay and Yangon. These three companies account for most of the regulated agrochemical supply. While Diamond Star and Awba work actively with agents, Golden Key has, in the last 5 years, adopted a new marketing strategy called "total solution." It has elements of contract farming but is more flexible. It entails direct sales to farmers, bypassing agents and developing a solid market base backed by technical assistance, credit, and the opportunity to sell crops directly to the company.

All the major companies have a network of agents in Southern Shan who travel to villages and market products directly to farmers. For example, in Taunggyi District, CP has 169 seed dealers and a maize seed production facility near Aung Ban (Nepali 2014). Both Awba and Diamond Star have more than 20 field extension staff based in Southern Shan and focused on sales. Golden Key has a showroom and store in six townships and more than 40 staff who tour the countryside to promote sales and provide technical advice.

According to retailers interviewed, the market is geographically distributed—each area is dominated by a preferred brand, suggesting that the choice is supply driven rather than demand driven.

4.2 Availability of Agro-Inputs in Southern Shan State

Input suppliers in Southern Shan get their products from large warehouses in the state, primarily run by Diamond Star and Golden Key, or from Mandalay or Yangon. Both cities are home to many wholesale companies that import for resale to retailers in smaller cities and villages.

Agro-inputs of all types and price ranges are widely available through the retail network, so access to inputs is not a constraint to small farmers in this region. There is a wide supply of seeds, agrochemicals, and machinery, according to a preliminary Winrock assessment at the start of 2015.

4.2.1 Agro-input Types

Seeds: The predominant seed available in input shops is vegetable seed, with brassicas (cruciferous vegetables) a particularly high seller. A wide range of local and imported (from Thailand and China) vegetable seeds and varieties is available throughout the state. There is a growing trade in hybrid maize seed especially among larger farmers (>2 hectares), supplied by CP and Awba. Use of improved seeds is very common, yet seed-saving remains common, even for corn.

Agrochemicals: The average township input dealer stocks a wide range of insecticides, fungicides, and plant growth hormones for use predominantly on crops grown in the hinterland. For example, Aung Ban, has a growing trade in plant growth regulators and, more recently, has seen increased use of herbicides, especially for field vegetables. According to dealers, herbicides cost two thirds of what hand weeding costs. The average township-based input dealers stock a range of fertilizers, including granular or prilled fertilizers ranging from urea and superphosphates to compound fertilizers. Some foliars are also available.

Organic Farming: The supply of organic inputs is limited. In Taunggyi one dedicated shop representing Shan Maw Myae Company provides 36 products of the brand. Some dealers are agents for manure-based compost imported from the Dry Zone.

Agricultural Equipment: Large companies such as Good Brothers and New Holland, government departments involved in supply services, and small individual importers provide good availability of agricultural equipment across the state. Specialized equipment, such as knapsack sprayers and irrigation piping and hoses, are available in most township input suppliers. Equipment is also made available and delivered across the state to any village where there is demand.

4.2.2 Distribution and Marketing of Unregulated Inputs

According to information gathered in interviews for this study backed by previous research (Winrock International 2015), more than half the products sold in Southern Shan come directly across the border from China and Thailand. There are several border posts in Northern Shan, such as Muse and Lashio, that are the main point of entry for inputs from China. The border towns of Myawaddy and Tachileik are the key entry points for unregistered trade from Thailand.

4.3 Services Provided by Input Suppliers in Southern Shan

4.3.1 Credit Availability and Conditions

The national supply network commonly offers producers credit for seeds and agrochemicals. (Transborder trade of unregulated products is cash only.) Availability and conditions for machinery credit, however, vary considerably owing to the larger amounts involved.

In the regulated market chain, input suppliers generally receive their supplies interest-free from their distributors (most are relatively large national companies) for 1 to 3 months. Many input suppliers offer credit to their customers in exchange for payment after harvest, at conditions set by the creditors. Most retailers offer farmers credit at a 2% to 3% interest rate for 5,000 to 1 million kyats ($4 to $780).

According to retailers, more than 60% of their regular clients need credit for purchases. They report that repayment rates among farmers is good; only 10% are unable to pay back their debt within the agreed time.

Golden Key is the only large national supplier that offers direct credit to farmers, with 4- to 6-month loans. Loans normally cover less than 90% of the value of the products advanced. The company requires a written contract and collateral (land certificate) in the few cases they offer 100% in-kind credit. The company says that about 20% of its portfolio is problematic loans. In 5% to 10% of these cases, the company has confiscated property to collect on the debt.

Payback is normally expected after harvest, in cash or in kind. Golden Key has an export department that collects crop payments and promptly gets them to market. Price is based on current market price. Sometimes the company offers a small discount on the loan. While the company doesn't charge interest, product prices differ for retail and direct farmer sales or purchases. The company adds a 1% to 2% price premium to the price charged to retail to cover for the service and risk.

Crop collectors also offer credit at rates similar to retail. However, there is hidden interest because payment is made in produce, and the collector sets the price at a discounted rate.

Credit is mostly offered through informal oral agreements, based on mutual trust and long-term business relationships. These financial relationships strengthen trade linkages and prevent small farmers from easily changing trading partners.

Credit to buy agricultural machinery is handled differently because it requires bigger loans. The government is one of the main sources of credit for farmers. The Agricultural Mechanization Department and the Ministry of Cooperatives both provide credit on similar terms. In 2014, in the Taunggyi area, 375 farmers received government credit to buy two-wheel tractors, which cost on average 1.5 million kyat. The loan is for three years, with annual payments and a one-off 30,000 kyat tax in lieu of interest. To get credit, farmers must produce an identification card, proof of property (land or a two-story brick house), and two referees with the same collateral. Despite the requirements for credit, the Mechanization Department says the rate of borrowing is increasing.

4.3.2 Technical Information and Training

Technical training on responsible and effective input use and management is the weakest point in the agricultural input-supply sector. Farmers in Southern Shan, as in other parts of the country, have limited knowledge of good input use practices and of the effects of improper use on human health.

Previous studies and this research concur that the main source of technical information on input use is local from retailers and distributors in townships and villages, and that the quality of their advice varies with their experience and knowledge.

Local retailers get their knowledge from the sales staff of the national distributing companies—mainly Awba, Diamond Star, and Golden Key, in the case of regulated inputs—and on unregulated trans-border imports through limited communication and label information in a foreign language. Farmers rely primarily on shop staff to tell them the information or read the labels' user instructions for each product.

As unregulated product sales in Southern Shan account for more than half of total sales, most products do not have labels in Myanmar language. Therefore, while retailers consider label instructions important, they are not an effective information source for customers.

Even when retailers know about good practices and responsible use, they are not always effective at transmitting this knowledge to farmers. Lack of written instructions on appropriate use prevents subsequent transfer of correct use information from purchasers to those who apply the inputs in the field.

Some farmers benefit from company extension advice. For example, Awba field staff educate farmers on how "to enhance yield with sensible cost and maximize farmers' income by providing technical know-how and modern agricultural practices" (company materials). The company uses demonstration plots to promote sales, particularly at new product line launch. It identifies a location in a market segment where it wants to sell, then provides full-service assistance to a lead farmer to take the crop from seed through harvest, using Awba products including seed, fertilizers, and agrochemicals. The company follows up with field demonstration days to promote the product to sales agents, retailers, and farmers. While this is an effective marketing strategy, it is not effective in promoting responsible chemical use to the broader farming community, who learn primarily about the benefits of the new products.

Golden Key has a similar strategy with a network of sales agents/technical advisers who work in the villages with lead farmers and others. One issue the company raised is the difficulty in finding staff who both speak the local language and have the technical knowledge. Most extension workers are graduates of Yezin University, however they need local translators, which makes communication less effective and efficient.

CP has 40 demonstration sites around Southern Shan. The company uses an approach similar to Awba, selecting key farmers who use CP seeds and fertilizers and follow recommended growing practices. The cooperating farmer's fields are then used to promote the CP method and products. This helps recruit farmers to expand the company's supply chain (Nepali 2014).

Health and safety issues related to appropriate input application practices and responsible use of chemicals on food crops are not covered by retailers or in the labeling instructions. Retailers do not consider themselves responsible for sharing this information with customers. Although some shops carry masks and protective clothing for use in chemical application, others do not think these products need to be sold together. Safety equipment is available, but the importance of its use and the harm to human health from negligent practices are not emphasized to farmers. There is an active, long-standing government program of extension, but it is not very effective owing to budget and staffing constraints.

Some initiatives aim to promote and support organic farming, which requires specialized technical information. In Southern Shan, the German government cooperation agency, GIZ; a voluntary initiative led by students with the support of Shan Maw Myae; and a Japanese NGO, Terra People Association (TPA), are leading emerging efforts to promote organic farming production knowledge and practices. As yet, their efforts are not coordinated.

The market for organic production is small (although farmers claim to be interested), so adoption of techniques is low. For example, TPA has been operating in Taunggyi for 15 years and has trained more than 1,000 farmers, but only a quarter of them could be considered to be practicing organic farming. The student-led training initiative engages some 100 farmers throughout Southern Shan.

Agents involved in technical training and knowledge transfer use the same mechanism—demonstration plots and lead farmers. However, this research found lead farmers may be disinclined to share knowledge with the wider farming community in an attempt to maintain a competitive advantage.

4.4 Overview of Smallholder Agro-Input Demand

According to the Myanmar Agricultural Census in 2010, Southern Shan ranked 8th of the 17 regions or states in the country in organic and chemical fertilizer use (**Table 4**).

Table 4. Myanmar Agriculture Census, 2010—fertilizer use

Region/State	Number of households, by usage of fertilizer			
	Organic Fertilizer	%	Inorganic/ Chemical Fertilizer	%
Union of Myanmar	4,415,732	100.0	3,930,370	100.0
Kachin	106,629	3.6	54,689	1.6
Kayah	21,390	0.7	27,064	0.8
Kayin	49,579	1.7	34,500	1.0
Chin	14,779	0.5	1,350	0.0
Sagaing	711,798	24.3	579,131	**17.3**
Taninthayi	73,663	2.5	61,730	1.8
Bago East	225,786	7.7	210,640	6.3
Bago West	270,297	9.2	265,198	7.9
Magway	573,633	19.6	525,221	**15.7**
Mandalay	694,618	23.7	597,009	**17.9**
Mon	142,108	4.9	144,554	4.3
Rakhine	268,604	9.2	189,919	5.7
Yangon	190,013	6.5	195,688	5.9
Shan South	213,552	7.3	196,818	5.9
Shan North	223,856	7.7	201,856	6.0
Shan East	39,959	1.4	38,704	1.2
Ayeyarwady	595,468	20.4	606,299	**18.1**

Source: Myanmar Census of Agriculture, 2010 9

Source: Yu Lwin, et al. 2013

Soybean farmers do not use many agro-inputs other than seed, which they usually save from previous crops and broadcast manually. They do not use commercial improved or hybrid seed. They tend to sort and select seed based on crop duration, and seed and plant size. Some farmers may get seed from small traders (whom they sell to) or other soybean farmers when needed. An acre of irrigated land requires eight to nine viss

(approximately 14 kg.) of seed. At a reported seed price of 1,700 kyat ($.65) per viss, seed costs 14,450 kyat ($14) per acre[3] (Winrock International 2015).

Input costs for soybean production are much lower than for other cash crops. Since soy is grown in rotation, fertilizer is not needed. Soybeans benefit from fertilizers used for the previous crop (garlic, maize, or rice). Where pod borers are prevalent, farmers spray flowering plants to reduce infestation. The cost is minimal, 2,000 kyat ($1.94) per acre (Winrock International 2015). Coffee production does not use chemical inputs. Some producers apply manure. Larger plantations buy it; small farmers produce their own.

Vegetable producers are among the highest users of agricultural inputs, especially those who grow tomatoes and cabbages, popular in Aung Ban and Inle Lake, according to retailers. Most vegetables are grown on relatively small plots, with increasing intensification.

4.5 SWOT Specific to the Agro-Input Supply Sector in Southern Shan

The environment and sector dynamic differ from the national level because of structural differences and the impact of border trade. While the SWOT analysis clearly identifies many weaknesses, it also highlights a long list of opportunities for development in Southern Shan. See **Table 5**.

Table 5. SWOT of agro-input sector in Southern Shan

SECTOR STRENGTHS	SECTOR WEAKNESSES
Well-developed distribution network *No observed restriction to access to inputs. Remote areas are covered by sub-agents* *Retail (including sub-dealers) has broad outreach* *Retail (including sub-dealers) influences farmers' product choices and production practices* **Direct access to cross-border markets, large variety of products** *Local retail has direct access to wide range of products, although many are unregistered* *More products and pricing options than among regulated trade*	**Highly fragmented** *Local small retailers have no sector coordination; cannot be represented or speak with one voice* *Third-party communication with local retail sector difficult; sector's ability to promote change limited* *Cohesive information and advice transfer to farmers is limited. Limited quality assurance without regulation* **Highly unregulated** *Unregulated products in formal retail has created a rift with national suppliers* *Unregulated products increase risk to farmers* **Low capacity for technical advice to farmers** *Local retailers don't understand correct use, application practices, or health and safety issues* *Retailers may promote cheap, low-quality products to cash-poor farmers, regardless of production, food safety implications*
EXTERNAL OPPORTUNITIES	**EXTERNAL THREATS**
Donor investment in farmer knowledge, productivity *Donors increasingly promote South Shan agriculture development for a number of crops, offering access to finance and production know-how* *Outside assistance could address some sector weaknesses and mitigate some external threats*	**Political and currency fluctuation** *Input supply and agriculture markets in south Shan linked to trans-border trade, creating vulnerability of local expenditure (cost in USD) and income (priced in kyat)*

[3] Based on primary data collected in key informant interviews.

Increase inputs use *Considerable space for growth of input use, given high level of vegetable production in Southern Shan* *Potential for agricultural expansion to available land in Southern Shan* **GAP use will increase demand for quality products** *Farmers will better understand input use and consider quality in selecting products, not simply price* **Improved agricultural market access leading to higher investment in production development** *Producers are well located to reach regional markets and improve agriculture-derived incomes* *Increased production and market liberalization may improve market links for farmers, increasing their income and ability to invest in agricultural development* **Expansion into microcredit provision** *Awba and Golden Key have microfinance companies and plan to address credit needs in Southern Shan*	*Slowdown of crop exports due to political uncertainty may affect investment in agriculture and input market* **Price-based demand; lack of market development** *Focus on low-quality, low-price products keeps profit margins low and perpetuates pressure to increase sales instead of advising on responsible use of inputs* *Stagnation of agricultural trade harms rural livelihoods and farm investments* **Slow rate of mechanization lowers productivity** *Increasing migration to urban centers and abroad threatens farm labor; labor productivity can only be improved by rapid mechanization*

5 Conclusions

5.1 The Agro-Input Supply Sector

Since 2003, the private sector has been allowed to import agricultural chemicals and fertilizers. In 2004, the government liberalized the market for most industrial crops, opening the door for progress in market-driven agricultural production. Both demand and supply have grown dramatically on the national market and the supply sector's distribution network covers all villages in the country. Most inputs, including farm machinery, are imported from neighboring countries (OECD 2014). Expansion of illegal trade in inputs offers low-priced options attracting small, poor farmers.

Table 6 summarizes supply and demand by input. Availability is relatively good across the country, while demand varies by farming practice. Highest demand is for fertilizers, followed by other chemical inputs. Demand for organic farming inputs and for machinery is low.

Table 6. Key product lines and market characteristics

Product Line	On the market?	Available in villages?	In demand?	Affordable?	Targets clients?
Seed	Good	Varies	Varies	Yes	Medium and large farmers
Fertilizers	Good	Good	Yes	Yes	All farmers
Agrochemicals (pesticides and herbicides)	Good	Varies	Varies	Yes	All farmers
Production tools and machinery for smallholdings	Varies	Varies	Varies	Competitively priced	Medium and large farmers
Packaging	No	No	No	No	Specialized contract farmers

Post-harvest equipment	No	No	No	No	Specialized contract farmers
Organic agriculture input product lines	Limited	Limited	Limited	Higher end	Niche market

Major opportunities exist for improvement in product quality. Most farmers have limited access to high-quality inputs, particularly seeds and fertilizers. They use low-quality seeds saved from previous harvests or bought from other farmers and chemical products that are mostly unregulated, with suspect active ingredients and effectiveness.

The sector is highly concentrated and coordinated at the national level. Three companies—Awba, Diamond Star, and Golden Lion—hold more than 60% of the market share and cooperate in a sector association. At the local level, the sector is increasingly competitive and uncoordinated with local retailers and a network of agents and sub-agents who work independently without a sector association or forum. These agents are the input supply sector representatives who work directly with farmers.

Weak agricultural extension services, research and development, and rural infrastructure hinder investment by large and small investors at the production stage and all along the agricultural value chain. Many private sector companies deem the legal and regulatory framework and its implementation unsatisfactory. The system of input registration (seeds and agrochemicals) is inefficient; procedures are centralized and unclear, with decision-making concentrated in a few hands and open to exploitation and bribery. This has promoted growth of a black market that distributes unregulated products throughout the country.

Farmers do not trust sector business practices and the quality of products offered. Allegations of product adulteration are made at all levels, linked to weak regulation of products. The Department of Agriculture is almost exclusively responsible for regulation of the agro-inputs sector. Enforcement capacity is weak, however, enabling widespread illegal practices to undermine quality of products and services.

Deficient trans-border trade control and regulation has prompted businesses to blur the line between legal and illegal activities. Many formal entrepreneurs openly admit to engaging in illegal trade to remain competitive and retain their market, since about half of all trade is illegal.

Availability of credit to farmers is an important sector service. Insufficient rural credit currently exists for small farmers, due to the legal and regulatory framework. Informal moneylenders fill this void. These informal arrangements are available to most, but often are not structured in favor of the farmer. Repayments are often expected at harvest and tied to the loan, so farmers are compelled to sell when prices are lowest. No insurance is available for agricultural loans, leaving all stakeholders vulnerable.

Support services should include the provision of technical advice and agricultural extension work to coach farmers on how to improve production practices, including effective and efficient use of inputs. However, technical information on inputs is essentially in the hands of the private sector and there are notable gaps in information on responsible use and health and safety issues. Retailers need to push for high-volume sales because the markup is so low, which conflicts with promoting restricted and responsible or correct use of chemicals.

There is no system for knowledge transfer except for the government's required pesticide retail licensing course and the private sector's annual sales events, which gather local distributors for a week of product promotion and sales.

5.2 Agro-Input Supply Sector in Southern Shan

Agrochemicals, fertilizers, vegetable seeds, and hybrid maize seed are widely available and farmers in Southern Shan use them. Even in remote areas where use tends to be lower, farmers can easily buy inputs, including fertilizers, agrochemicals, and seeds. However, the quality of products that farmers use are in question.

National supplier companies that dominate the Southern Shan market are Diamond Star, Awba, and Golden Key. A fragmented, largely uncoordinated group of retail dealers and sub-dealers, running medium to small businesses, distribute their products.

The local market, close to trans-border trade routes, is flooded with unregulated products that are cheaper than registered, official products. Since consumers choose based on price, they often sacrifice quality.

Large national suppliers have extensive networks of extension staff throughout Shan, however their objective is to promote product sales. Field trials with lead farmers focus primarily on specific products, not addressing farmers' general knowledge gaps.

Township retailers in Southern Shan receive credit and information on new products from national distributors. However, national suppliers do not train township dealers on responsible practices for chemical use. Farmers do not receive much advice from retailers, particularly since most sales staff are non-technical, are removed from users' production concerns, and are motivated by low markup to increase sales volume.

Safety equipment required to apply agrochemicals is available, but not necessarily from inputs retailers. It is sold primarily in hardware stores, so the link between chemical use and the need for protection is not apparent. While many small farmers have reasonable access to agricultural inputs, the importance of correct application and safe use is not widely understood.

Farmers can borrow to buy seeds and chemical input purchases via the retail network. Arrangements are informal and interest rates are reasonably low at 2% to 3%.

Agricultural machinery is widely available in Shan through national dealers or imports sold in general retail or dedicated machinery shops.

Only the Cooperatives Ministry and Mechanization Department of the Ministry of Agriculture offers interest-free credit for machinery. Nearly 400 farmers in 2014 and 150 (so far this year, 2015) have reportedly purchased equipment on credit through these channels.

Although the supply network for all inputs is well developed, farmers and agricultural production face other challenges. The main concerns are:

- Farmers' lack of technical skills in effective input use and knowledge of the harmful effects of incorrect use on crop yield
- Farmers' lack of understanding of the harmful effects of chemicals on human health (during input application and for food safety)
- Retailers' lack of appropriate training on these issues, as farmers consult them for technical advice
- Fragmented local retail sector, which makes it difficult for third parties to get involved at the sector level
- Lack of inclusion of independent sub-dealers in technical information exchange between national and township dealers.

6 Recommendations

Many aspects of the agricultural input supply sector and its support services merit assistance. Some issues such as credit provision, land tenure rights, sector regulation review, and infrastructure development are outside the direct scope of the project and best handled by others supporting government reform. The Value Chains project has an opportunity to have a positive impact by collaborating with the private sector and civil society to improve general public and farmer knowledge of risks. An effective awareness campaign can influence demand for inputs, promoting the need for quality assurance and comprehensive information on safe use and practices, benefiting productivity and food markets.

Issues to Be Addressed

- Farmer knowledge of GAP strategies, including correct use and safe application of agrochemicals
- Sector coordination at township level
- Consumer awareness of chemical use effects on food safety and human health.

Recommended Approaches

The project should capitalize on the existing influence of the wide-reaching retail network to deliver information to farmers by using the main information sources—private sector–retail events and mandatory retailer pesticide training. The project should aim for systematic, long-term, sustainable change to the input supply sector and farmer demand. The market is dominated by low-quality, cheap, unregulated products. Private sector companies whose profits are being undercut by illegal competition and public sector institutions struggling to enforce regulations have a common interest in change.

The project should seek to engage the National Association of Input Suppliers (NAIS), which represents the sector at the national level. During interviews, NAIS expressed interest in collaborating with institutions to improve sector practices. Association members, who hold the majority of the regulated market share, have a vested interest in improving farmers' understanding of quality and risks of unregulated product use, to develop a market that competes in terms of quality as well as price.

While local retail is the main source of technical advice to farmers, it is fragmented and uncoordinated. It is a weak entry point for interventions aiming to produce sustainable systematic change.

A business case should be made for developing a public–private partnership between the NAIS and PPD. One of the aims of the partnership would be to review the role, contents, and impact of the retail certification training course and develop proposals to improve its relevance and enhance the quality of retail products and services. Independent sub-dealers should be included in the training group. More comprehensive retail advice would increase farmers' knowledge.

Such a partnership could also provide an opportunity for the project to improve basic regulatory requirements, such as labeling formats. For example, East–West Seed's management suggested that pesticide labels would be more useful if information about quantities were listed in units per liter or spray tank (as in Cambodia) instead of per hectare, which is more difficult for farmers and laborers to interpret.

The project could engage private sector market leaders in a collaborative review of corporate events in townships to promote products with the aim of improving communication with retailers. The project could lead an appraisal of the objectives and design of corporate events to incorporate information covering quality, health, and safety that would enable retailers to give farmers more comprehensive, effective advice.

The business relationship between national level suppliers and local retailers should be leveraged to promote township-level sector coordination. NAIS has rebuffed the idea, because of the conflict of interest for retailers who sell illegal products in their official marketing network. However, it is in the long-term interest of the sector to engage and empower retail by creating township-level associations. Increased coordination would increase the level of control and ability to self-regulate. These associations would be a direct entry point for communication with retail to third parties.

The project should engage the consumer in a public education campaign on the importance of proper chemical input use and effects on human health. This campaign should be separate from but coordinated with project extension work and field trials to improve farming practices and farmers' understanding of the inputs they use. The project should collaborate with the Myanmar Consumer Union, an independent civil society organization that promotes consumer rights with a consumer training team already working on similar issues. Such a campaign could promote farmers' adoption of GAP by increasing market demand for safer products. GAP promotion for input use must be integrated in retailers' advice to farmers, reinforced by PPD and large suppliers.

Potential partners

Private sector supply industry: Input Supplier Association (Diamond Star, Awba, Golden Key), East–West Seed, BioSupreme, Control Union, Myanmar Organic Agriculture Group

Private sector PR and public information companies and groups: Farm Radio, Cherry Radio, The Farmer Journal, and any partners engaged in the Value Chains communication strategy implementation

INGOs/Donors: Mercy Corps, Food Security Working Group, GIZ

Civil Society: Myanmar Consumer Union

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