



INTERNATIONAL
TRADE
ADMINISTRATION



2017 Top Markets Report **Agricultural Equipment**

A Market Assessment Tool for U.S. Exporters

February 2017



Executive Summary

Introduction

Despite a negative overall outlook for 2017-2018, opportunities exist for U.S. agricultural equipment exporters willing to pursue them. The Black Sea Region has emerged as a major exporter of wheat, fueling Russian and Ukrainian imports of U.S. machinery. Low interest rates and funding from Brussels enable farmers in several European Union countries to invest in equipment. Western Hemisphere markets including Mexico, Chile and Peru present opportunities for exporters of certain types of equipment. Nevertheless, U.S. exports of agricultural equipment will continue to decline in 2017-18. Market conditions responsible for the decline—which is a worldwide phenomenon—are unlikely to change in the near to medium term. Low prices for widely-traded agricultural commodities are expected to continue through 2018 and beyond. Large inventories of late-model used equipment will continue to be a drag on the market, especially in North America. Weak local currencies and high interest rates in Brazil and South Africa will prevent recovery in these markets.

The conditions that have depressed U.S. exports of agricultural equipment since 2013 remain unchanged: low prices for most agricultural commodities. Strong harvests, slower growth in demand for food, and large global stocks of agricultural products all hold prices down. Lower oil prices have had a mixed effect: moderating farmers' fuel costs, while suppressing demand for food in countries economically dependent on oil exports.ⁱ

Weak foreign currencies vis-à-vis the U.S. Dollar combined with high interest rates make American equipment more expensive in a number of important markets. While aggressive marketing and pricing may compensate in some cases, currencies in a number of large markets have declined by 40 percent or more in recent years, seriously handicapping U.S. exporters' competitiveness. On the other hand, low interest rates, especially in countries that have adopted the Euro, enable financially sound ag producers to invest for the future in capital equipment despite weak commodity prices.ⁱⁱ

The goal of the 2017 Agricultural Equipment Top Markets Report in ranking countries is to identify opportunity markets in a difficult global business climate, by relating export volumes, market growth in recent years, political and economic risk and future potential. The eight markets ranked in 2017 represent 60 percent of U.S. exports in 2015—the last year for which complete, globally comparable data were available as the report was written. Canada, Mexico and Australia together account for half of total exports. All three are Free-Trade Agreement markets and offer the most favorable business climates for the broadest range of U.S. exporters. The others—Germany, Poland, Chile, Ukraine and Brazil—possess a diverse range of characteristics: volume, growth, risk and potential for the future.

AGRICULTURAL EQUIPMENT:

2017-2018 TOP MARKETS

ITA ranks leading U.S. agricultural equipment markets for 2017-18 as follows:

1. Germany
2. Poland
3. Canada
4. Mexico
5. Australia
6. Chile
7. Ukraine
8. Brazil

Overview and Key Findings

U.S. agricultural equipment exports will continue to decline in 2017-18 in the absence of major increases in global agricultural commodity prices. Such increases are unlikely. High interest rates in markets such as Brazil and South Africa will further constrain the recovery of U.S. exports. Low interest rates in others, especially the Eurozone, may mitigate somewhat the effects of low agricultural commodity prices. Weak local currencies relative to the U.S. dollar will also remain a barrier to exports of U.S. agricultural equipment. Low petroleum prices, if they continue, will hold down farmers' production costs, while restraining economic growth and demand for imported foodstuffs in petroleum-producing countries.

When global agricultural equipment markets are likely to bottom out is an open question. The German trade association VDMA

Agricultural Machinery has identified "the saturation of the established markets" in Europe and the Western Hemisphere as the key obstacle to recovery.ⁱⁱⁱ North American observers have mixed expectations for 2017, with U.S. dealers reportedly "less pessimistic," while many of their Canadian counterparts expect increased sales. Both groups view their used equipment inventories as an obstacle to higher sales of new machinery.^{iv}

Opportunities

In a generally bleak international marketplace, some bright spots could be found in 2016. The Russian and Ukrainian markets have shown significant growth, especially for equipment to produce grain, oilseeds and other commodity crops. U.S. exports to Russia were up an impressive 35 percent overall in the first six months of the year. Exports to Ukraine grew even more dramatically, by 204.3 percent.

2015: U.S. Exports at a Glance

Equipment Types:	Exports: U.S.\$ Millions	Percent of U.S. Ag Equipment Exports	Change 2012-15	Change Jan.-June 2016
For Grain, Oilseeds, & other Commodity Crops ---	\$ 3,039.1	31.2%	-16.2%	-15.3%
Tractor Parts, Engines & Engine Pts. ---	2,257.6	23.2%	-1.3%	-18.6%
Mowers & Power Equipment ---	2,071.8	21.3%	-5.5%	-12.0%
For Raising Livestock ---	820.9	8.4%	-3.2%	-4.9%
For Produce & High Value Crops ---	727.7	7.5%	-10.0%	-9.9%
Low- & Medium-HP Tractors ---	473.6	4.9%	23.3%	-5.8%
Sprayers ---	200.0	2.1%	-23.3%	6.7%
<u>Other</u>	<u>157.8</u>	<u>1.6%</u>	<u>-14.0%</u>	<u>-3.6%</u>
TOTAL	\$9,748.5	100.0%	-8.9%	-13.4%

Reduced levels of conflict between the two countries combined with more stable economies have led to the emergence of the Black Sea Region (Russia, Ukraine and Kazakhstan) as one of the world's major wheat exporting areas.^v While impressive, this recovery is from very low levels and quite fragile, given the region's high level of political risk.

Less dramatic is a modest but noticeable improvement in a number of European Union (EU) markets in 2016. Germany, in particular, has shown surprising growth as a market for equipment for grains, oilseeds and other commodity crops. Extremely low interest rates in the Eurozone and the allocation of EU rural development funds for the Baltic, Central and Southeastern European countries are all providing immediate stimulus for agricultural equipment purchases in some markets. Especially for the EU's former Soviet-bloc members, like their neighbors to the East, modernization of agricultural economies after decades of under-investment will continue to drive sales of agricultural equipment.

A number of Western Hemisphere FTA markets continue to present opportunities for U.S. exporters. Mexico is the United States' largest market for tractor parts, engines and engine parts, and exports of these products to Mexico have expanded in both absolute and relative terms in recent years. Mexico is also a leading market for equipment for the cultivation of fresh produce and high-value crops, raising livestock, and for mowers and other power equipment. Chile and Peru have shown strong growth in recent years, although export performance in 2016 has been disappointing.

For companies with the right products that are willing to market and price competitively, Australia also presents opportunities. The largest destination for U.S. agricultural equipment exports outside North America, Australia is an FTA market where the rule of law

is well-established, with strong intellectual property protection, direct shipping and air services; a strong U.S. business presence; and very similar commercial and cultural values. Australia exports meat to its Asian trading partners, in particular FTA partners China, Japan and Korea, and U.S. exports of equipment for raising livestock—as well as mowers and other power equipment—have done well in 2016.

Top Markets Ranking

The 2016 Agricultural Equipment Top Markets Report ranks the leading markets as follows:

1. Germany – A high volume, low risk market. U.S. exports to Germany grew 12 percent in the first six months of 2016, driven largely by increased shipments of tractor parts, engines and engine parts and by unexpected growth in equipment for grains, oilseeds and other commodity crops. Increased exports from the latter categorically and from other OEM equipment appears to be the result of extremely low interest rates and a shift by many German farmers out of dairy operations.
U.S. Share of Import Market (2015) = 14.5%
2015 U.S. Exports = \$381.9 million
2012-15 Trend = - 8.5%
2016 Trend (Jan.-June) = 12.1%

2. Poland – A medium volume, low risk market. Strong export performance is supported by the on-going need for investment to modernize the Polish agricultural economy. Poland has made extensive use of EU rural development funds. As a result, this market is driven by a combination of market fundamentals and government policy.
U.S. Share of Import Market (2015) = 3.9%
2015 U.S. Exports = \$73.4 million
2012-15 Trend = 3.3%
2016 Trend (Jan.-June) = 14.6%

3. Canada – Canada represents the highest volume of any U.S. export market and, along with Mexico and Australia, the lowest risk. Growth is negative and in double digits since

2013, however. The Canadian agricultural economy is highly exposed to the fall in commodity prices. This continues to have a strong negative impact on U.S. exports of equipment for grains, oilseeds and other commodity crops, which account for more than 40 percent of U.S. exports to Canada. Long-term, the fundamentals of Canada as a market remain strong, but short- to medium-term prospects for a return to growth are weak.

U.S. Share of Import Market (2015) = 64.7%

2015 U.S. Exports = \$2,929.5 million

2012-15 Trend = - 10.8%

2016 Trend (Jan.-June) = - 17.2%

4. Mexico – The United States’ second-largest export market, Mexico is characterized by low risk and high export volumes. Tractor parts, engines and engine parts have become the major growth driver for U.S. exports in recent years and account for more than half of U.S. exports. Mexico is also a major producer and exporter of fresh produce, high-value crops and meat and is a major market for equipment in these sub-sectors.

U.S. Share of Import Market (2015) = 62.0%

2015 U.S. Exports = \$1,209.6 million

2012-15 Trend = 7.0%

2016 Trend (Jan.-June) = 7.6%

5. Australia – Also a high-volume, low-risk market. Like Canada, Australia is heavily exposed to global commodity prices. Equipment for grain, oilseeds and other commodity crops comprise 45 percent of U.S. exports and have done poorly in recent years. Since 2012, the market has declined at a faster rate than total U.S. exports. Mowers and other power equipment and equipment for raising livestock, however, have done relatively well.

U.S. Share of Import Market (2015) = 46.9%

2015 U.S. Exports = \$774.6 million

2012-15 Trend = - 12.2%

2016 Trend (Jan.-June) = -21.8%

6. Chile – A low-risk FTA market that has grown rapidly over the last decade. Expansion of U.S.

exports has been led by double-digit growth in shipments of low and medium-horsepower tractors, tractor parts, engines and engine parts. Equipment for raising livestock, fresh produce, and high-value crops and mowers and power equipment have also shown strong growth. Unfavorable exchange rates are a challenge in Chile, however.

U.S. Share of Import Market (2015) = 19.3%

2015 U.S. Exports = \$226.7 million

2012-15 Trend = 16.8%

2016 Trend (Jan.-June) = - 27.9%

7. Ukraine – A high-risk market with high-potential. Ukraine’s productive soil and temperate climate can produce a diverse range of crops, but the country’s agricultural economy needs significant reform and investment to realize its potential. The country has a strong track record as a market for U.S. agricultural equipment exports, ranking seventh as recently as 2012. Despite the opportunities, Ukraine is a very difficult place to do business. The risk of renewed conflict with Russia remains a serious threat to the stability of Ukraine as a market.

U.S. Share of Import Market (2015) = 21.0%

2015 U.S. Exports = \$61.6 million

2012-15 Trend = - 45.6%

2016 Trend (Jan.-June) = 204.3%

8. Brazil – A high-volume Western Hemisphere market currently suffering from a combination of low international commodity prices, a heavy reliance on export markets for those commodities, high interest rates and a weak currency. Nevertheless, Brazil remains one of the United States’ 10 largest export markets for agricultural equipment and was the fourth largest as recently as 2013.

U.S. Share of Import Market (2015) = 41.9%

2015 U.S. Exports = \$274.3 million

2012-15 Trend = - 27.8%

2016 Trend (Jan.-June) = -39.8%

South East Europe: EU Funds

A number of smaller, more recent EU member states are well-positioned to benefit from European Union funding to modernize their ag economies. EU Agriculture and Rural Development Funds, which are available to all member states, are intended to help rural areas of the EU to meet the “economic, environmental and social challenges of the 21st century.” A major component of the EU’s Common Agricultural Policy (CAP), the rural development program complements direct payments to farmers and agricultural market management measures. The program provides funding in the amount of €100 billion, from 2014 to 2020. These funds will leverage a further €61 billion provided by EU Member States themselves.^{vi}

In Southeastern Europe, the EU will provide Romania with \$9.0 billion, Hungary with \$3.8 billion, Bulgaria with \$2.6 billion, and Croatia with \$2.3 billion in rural development funds, the equivalent of \$17.7 billion from 2014 to 2020.^{vii} Thousands of small farmers in the four countries are eligible to use EU rural development funds to fund investments in irrigation technology, crop storage, agricultural machinery, and agricultural chemicals.^{viii}

U.S. exports to these four Southeast European countries totaled \$129 million in 2015. Exports grew 4.8 percent in 2015, accelerating sharply to 14.8 percent in the first nine months of 2016. U.S. market share is generally quite small, reflecting the strong presence of European suppliers, but there is also plenty of room to compete.

The U.S. Industry

Data used for this report are from the North American Industry Classification System (NAICS) 333111 “Farm Machinery and Equipment Manufacturing” and the 98 corresponding ten-digit tariff codes in the Harmonized Tariff

Southeast Europe: EU Rural Development Funds

	2015 Market Size	U.S. 2015 Market Share	2014-2020 Rural Dev. Funds*
Bulgaria	\$583.1 mn.	1.0%	\$2.6 billion
Croatia	\$93.2 mn.	2.2%	\$2.3 billion
Hungary	\$556.0 mn.	21.5%	\$3.8 billion
Romania	\$551.1 mn.	0.7%	\$9.0 billion

* U.S. Dollar value as of May 23, 2015, when the 2014-2020 Rural Development Funds program took effect.

Schedule (HTS) of the United States, and from the United Nations’ COMTRADE database.

More than 1,000 companies manufacture agricultural equipment in the United States.^{ix} These businesses employed more than 60,000 American workers in July 2016.^x Agricultural equipment manufacturing is characterized by a well-compensated workforce and, since the end of the financial crisis, low unemployment across a range of skilled trades and professions.^{xi}

While the range of products included under NAICS 333111 is extensive, it omits certain types of equipment that are in widespread use in commercial agriculture. Not included, due to the limitations of available trade data, are grain storage buildings; precision agriculture technology (satellite navigation, wireless internet, information technology and other ITC products for maximizing the productivity of agricultural inputs) for after-market sale; pumps, filters and other systems that support the use of irrigation equipment; and unmanned aerial vehicles (UAVs). Data for these products cannot be broken out from U.S. or international sources for specific agricultural end-uses. Also excluded from this document are more general-purpose products such as light construction machinery, transportation equipment, etc.

This report sub-divides the HTS export data into several categories:

- Equipment for cultivating grains, oilseeds, and other staple or commodity crops.
- Equipment for raising livestock.
- Equipment for cultivating fresh produce and other high-value crops.
- Mowers and other outdoor power equipment.
- Low and medium-horsepower tractors.
- Tractor parts, engines and engine parts.

For a list of products included in each category, see the **Appendix**.

2015 Export Performance

Total U.S. exports fell 12.2 percent for the year. Canada extended its double-digit drop (down 18.8 percent) in imports of U.S. agricultural equipment, while the Mexican market continued to expand (up 11.6 percent), mostly as a result of increased exports of tractor parts, engines and engine parts. Exports to Australia were essentially flat (down 1.4 percent).

Exports to the European Union as a whole also declined, but not as rapidly as elsewhere (down 9.1 percent). The expansion of U.S. exports to China in 2015 was unexpected and appears to have been almost entirely the result of increased sales of combine harvesters. Exports to Brazil and South Africa fell precipitously, due largely to low commodity prices and exacerbated by weak local currencies.^{xii}

Challenges & Obstacles

Depressed markets for agricultural equipment are a global phenomenon. Trade in agricultural equipment declined 14.2 percent in 2015. Every major exporting nation reported declines in their overseas shipments, most in double digits.^{xiii}

Total global production of agricultural equipment amounted to \$111.7 billion in 2014, according to VDMA Agricultural Machinery.

Western Europe, China, North America account for roughly 70 percent of the total. More detailed regional comparisons are difficult because of significant exchange rate fluctuations in 2014. VDMA points out however, that declining sales in Russia and Brazil were made worse for exporters by rapidly devaluing local currencies.^{xiv}

Commodity Prices

After peaking in the spring of 2011, global prices for most agricultural commodities began a decline that only began to abate in the second half of 2016. As measured by the FAO Food Price Index, aggregate prices fell more than 90 points—representing nearly 40 percent of their value—from January 2011 to January 2016. Prices for cereals peaked in the second quarter of 2011 and have fallen steadily since, giving up 32 percent of their value through September 2016. Dairy and meat prices peaked later in 2013 and 2014, respectively.^{xv}

The United Nations Food and Agriculture Organization (FAO) and the Organization for Economic Cooperation and Development (OECD), in their joint *OECD-FAO Agricultural Outlook 2016-2025*, predict that global ag commodity prices will remain flat for the near to-medium future, at least.^{xvi} Findings relevant to agricultural equipment include:^{xvii}

- Efficiency gains in production enable production growth at lower real prices
- Increases in food demand will be limited by slowing population growth and a gradual saturation of consumption in emerging economies
- Productivity growth will be driven mainly by yield improvements

The principal reasons given in the OECD-FAO report for sustained lower agricultural commodity prices are several years of strong growth in global commodity supplies,

continuing through 2016; slower growth in demand for food due to a slowing global economy, lower oil prices, and continued expansion of global stocks of agricultural products. The OECD-FAO report's authors expect demand growth to slow progressively over the next 10 years.^{xviii} These projections are broadly consistent with the U.S. Department of Agriculture's more short-term *World Agricultural Supply and Demand Estimates* (WASDE) reports.^{xix}

Any such projections are subject to change—especially the farther out in time the projection is made. OECD and FAO observe that, based on historical experience, “there is a strong chance of at least one severe price swing within the next 10 years,” due to potential changes in oil prices, crop yields, and regional and global economic growth. Climate change adds further uncertainty, “especially if the occurrence of extreme weather events intensifies.”^{xx}

Availability and Cost of Credit

The availability and cost of credit is a major consideration in any agricultural economy. National farm credit systems vary widely around the world. To establish a baseline for making projections, this report (except where otherwise noted) uses long-term lending rates forecast by the OECD.^{xxi}

High interest rates in certain markets (e.g., Brazil) as this report was written will restrain farmers' capacities to purchase agricultural equipment. On the other hand, low—or even, in the case in Eurozone countries in 2016, negative—basic interest rates create conditions in which financially sound ag producers can invest for the future in capital equipment despite low commodity prices.^{xxii}

Exchange Rates

The value of many foreign currencies has declined relative to the U.S. dollar in recent

years. This has made American agricultural equipment more expensive in many important markets. This trend continued into late 2016.

Weaker currencies have a negative impact on U.S. exports in many markets. In cases where when a country's local currency declined in value by more than 40 percent, U.S. exports dropped sharply. In major agricultural equipment markets such as Brazil, Russia and South Africa, weaker foreign currencies contributed significantly to the global decline in U.S. exports.^{xxiii}

Trade Barriers

More than half of U.S. agricultural equipment exports—57.2 percent—are to markets with which the United States has Free Trade Agreements; Canada, Mexico, and Australia alone take more than 50 percent. As a result, U.S. products already enter these markets duty-free. The European Union and other member countries of the OECD, where tariffs for the most part are low, account for another 25 percent of U.S. agricultural equipment exports.^{xxiv}

Other important ag equipment markets do impose burdensome tariffs, fees, and taxes. Brazil and Argentina, members of the Mercosur South American economic bloc, and South Africa are the largest and most significant of these markets. High tariffs in Mercosur countries—up to 35 percent in Brazil—combine with a variety of other fees and taxes to discourage imports and protect domestic manufacturing.^{xxv} Argentina and Brazil effectively ban the import of used and remanufactured agricultural machinery; South Africa also limits importation of used equipment.^{xxvi} U.S. exporters are also at a disadvantage relative to their European competitors due to the South Africa-EU trade agreement which eliminated tariffs on most imports from EU member states.^{xxvii}

EU markets are subject to the extensive EU regulatory regime. U.S. agricultural equipment exporters need to ensure that their products receive the “CE” mark in order to sell in any of the 28 EU member states. U.S. products must also comply with EU directives and regulations such as REACH (Registration, Evaluation, Authorization and Restrictions of Chemicals), WEEE (the Waste Electrical and Electronic Equipment Directive), RoHS (the Restriction of Hazardous Substances Directive), and others.

The EU standards and conformity assessment regimes—integral to obtaining the CE mark—present a variety of challenges for U.S. exporters. Products sold in the EU must comply with relevant European legislation. If a manufacturer uses European regional standards (called European harmonized standards or ENs), its products are presumed to be in compliance with the requirements. The CE mark is applied to products that conform to the relevant EN standard, or to certain “international” standards as defined by the EU (from the ISO, IEC, or ITU).

The CE mark indicates that the product complies with EU legislation, and is able to move freely within the European single market. While it is possible, theoretically, to use other standards to meet essential requirements, U.S. manufacturers report that in practice the costs and uncertainty associated with not using an EN or EU-recognized international and demonstrating that the alternative standards fulfill essential requirements can be prohibitive.^{xxviii}

The influence of the European standards regime is far-reaching—extending to important markets outside the EU itself. The result is that U.S. manufacturers face much the same barriers in these markets (including certain countries in the Middle East and South America) as they do in the EU.

Intellectual Property

Highly innovative U.S. agricultural equipment manufacturers make significant investments in intellectual property, including patented technologies, trademarks, and trade secrets. They also rely on—and generate—large amounts of proprietary data. Threats to intellectual property rights (IPR) vary widely from country to country.

Most major export markets for U.S. agricultural equipment are on either the intellectual property “Watch List” or “Priority Watch List” of countries contained in the **2016 Special 301** Report published by the Office of the United States Trade Representative. A country’s presence on either list indicates that particular problems—*not all of which relate to agricultural equipment*—exist in that country with respect to IPR protection, enforcement, or market access for persons relying on IPR. The 2016 Special 301 “Priority Watch List” includes Chile, China, Russia, and Ukraine. The “Watch List” includes Brazil, Canada, and Mexico^{xxix} For detailed information on each country, see: <https://ustr.gov/sites/default/files/USTR-2016-Special-301-Report.pdf>

China

There are important reasons why China, with its rapidly mechanizing farm sector, should be a major market for U.S. agricultural equipment. The world’s largest agricultural economy, China is in the midst of an intense and large-scale transformation from traditional labor-intensive farming practices to modern mechanized commercial agriculture. Very limited per capita water resources and arable land drive the need for the greater productivity that comes with mechanization. Food Security remains a strategic national priority for the country.

Nevertheless, as a result of Chinese Government industrial policy U.S. exports of all types of agricultural equipment—except

combine harvesters—have declined at an annual rate of 5.5 percent since 2013. This decline accelerated into double digits in both 2015 and 2016. Exports of combine harvesters are now being sharply curtailed as well, as a result of certain measures that provide subsidies to agricultural producers only when they purchase Chinese-made machinery and equipment. For these reasons, China is not ranked as a Top Market for U.S. agricultural equipment.

Top Markets Methodology

The 2016 Top Markets Report for Agricultural Equipment relates the following variables to rank markets:

- Agricultural commodity prices
- Interest rates, where available
- The volume of U.S. exports to a given market

- The rate of growth or decline in U.S. exports in recent years

Ranking top markets for agricultural equipment presents a variety of challenges, given the diverse product range and end-uses that characterize the agricultural equipment sector.

Some products are heavily exposed to global commodity prices: equipment for grain, equipment for raising livestock, in particular. Others are more dependent on consumers' discretionary spending, especially equipment for cultivating fresh produce and other high-value crops. Mowers and other power equipment have multiple commercial and institutional end-uses, in addition to agriculture. Tractor parts, engines and engine parts serve both the after-sales and OEM markets.

Trade Events

- **International Buyer Program Shows:**

Farm Progress Show 2017, 2018

Description: The Farm Progress features equipment and other products for use in cultivating corn and soybeans, as well as for handling, drying and storing grain. The show features an extensive array of in-field demonstrations on the show grounds.

Location: 2017 – Decatur, Illinois; 2018 – Boone, Iowa.

Dates: August 29-31, 2017; August 28-30, 2018.

Website: <http://farmprogressshow.com/>

International Production & Processing Expo 2017, 2018

Description: A large industrial trade show featuring machinery and equipment for raising poultry, milling animal feed, and processing and packaging and red meat.

Location: Atlanta, Georgia

Dates: January 31-February 2, 2017; 2018 TBD.

Website: <http://www.ippexpo.com/>

- **Other Domestic Events:**

Big Iron Farm Show 2017, 2018

Description: This show features equipment for use in cultivating wheat, corn and soybeans; sugar beets and potatoes; and for handling, drying and storing grain.

Location: West Fargo, North Dakota

Dates: September, 12-14, 2017; 2018 TBD.

Website: <http://bigironfarmshow.com/>

World Ag Expo

Description: World Ag Expo features machinery and equipment for use in cultivating fresh produce, orchard and vineyard crops, and cotton, as well as for dairy farms and irrigated agriculture.

Location: Tulare, California

Dates: February 14-16, 2017; 2018 TBD.

Website: <http://worldagexpo.com/>

World Dairy Expo

Description: A leading U.S. exhibition for the farm dairy sector, including machinery and equipment and related goods and services, as well as livestock.

Location: Madison, Wisconsin

Dates: October 3-7, 2017; October 2-6, 2018.

Website: <http://worlddairyexpo.com>

World Pork Expo

Description: A leading U.S. exhibition for the pork sector, including machinery and equipment and related goods and services.

Location: Des Moines, Iowa

Dates: June 7-9, 2017; 2018 TBD.

Website: <https://www.worldpork.org/>

- **Leading International Events:**

Germany/EU/Global

Agritechnica 2017

Description: The world's largest agricultural equipment exhibition, Agritechnica features machinery, equipment, and related goods and services for use in raising in crops.

Location: Hanover, Germany

Dates: November 12-18, 2017.

Website: <https://www.agritechnica.com/en/>

EuroTier 2018

Description: A leading global exhibition for machinery, equipment, and related good and services for use in cultivating livestock, milling animal feed and bio-mass energy production.

Location: Hanover, Germany

Dates: Second week of November, exact dates TBD.

Website: <https://www.eurotier.com/en/>

Australia & New Zealand

Commonwealth Bank AgQuip Field Days 2017, 2018

Description: One of Australia's largest agribusiness trade shows

Location: Gunnedah, NSW, Australia

Dates: Mid-to-late August; exact dates TBD.

Website: <http://www.agquip.com.au/>

Henty Machinery Field Days 2017, 2018

Description: A leading agricultural equipment exhibition in New South Wales.

Location: Henty, NSW, Australia

Dates: Late September; exact dates TBD.

Website: <http://hmfed.com.au/>

Dowerin Field Days 2017, 2018

Description: A large agricultural equipment exhibition in the Western Australian wheat belt, featuring machinery, equipment, and related goods and services.

Location: Dowerin, Western Australia, Australia

Dates: August 30-31, 2017; 2018 TBD.

Website:

<https://www.dowerinfielddays.com.au/>

Elmore Field Days 2017, 2018

Description: A leading agricultural equipment exhibition in Victoria, featuring agricultural machinery and equipment, related goods and services, and livestock.

Location: Elmore, Victoria

Dates: Early October, exact dates TBD.

Website: <http://www.elmorefielddays.com.au/>

New Zealand National Agricultural Field Days 2017, 2018

Description: One of the largest agricultural equipment exhibitions in the Southern Hemisphere, featuring all types of machinery and equipment for New Zealand's diverse agricultural economy.

Location: Hamilton, New Zealand

Dates: June 14-17, 2017; 2018 TBD.

Website: <http://www.fielddays.co.nz/>

Brazil

Agrishow

Description: A leading Brazilian agricultural exhibition, including agricultural equipment, ag chemicals, livestock, and related goods and services.

Location: Ribeirão Preto, Brazil

Dates: May 1-5, 2017; 2018 TBD

Website: <http://agrishow.com.br/en/>

Chile

IFT Agro 2017

Description: IFT Agro features agriculture machinery, equipment, supplies and services. The show is the leading agriculture show in Chile, covering all agriculture subsectors.

Location: Talca, Chile

Dates: April 5-8, 2017

Website: www.ift-agro.cl

Mexico

Expoagro Alimentaria 2017, 2018

Description: A leading Mexican trade exhibition featuring machinery, equipment, and related goods and services for a range of agricultural activities, including commercial fruits and vegetable production, greenhouse/shadehouse agriculture, irrigation, and commodity crops.

Location: Irapuato, Guanajuato State, Mexico

Dates: Early November, exact dates TBD.

Website: <http://expoagrogo.com>

Poland

Agrotech 2017

Description: A large, indoor agricultural equipment exhibition attracting international numerous international exhibitors.

Location: Kielce, Poland

Dates: March 17-19, 2017; 2018 TBD

Website: <http://www.targikielce.pl/en/22nd-international-fair-of-agricultural-techniques-agrotech,7699.htm>

Ukraine

InterAgro 2017

Description: A leading Ukrainian agricultural equipment exhibition, at which the Commercial Section of the U.S. Embassy in Kiev will organize a U.S. Pavilion.

Location: Kiev, Ukraine

Dates: November 7-10, 2017

Website: <http://interagro.in.ua/en>

ⁱ **OECD-FAO Agricultural Outlook 2016-2025**; Executive Summary, pp. 1-4; Organization for Economic Cooperation and Development/United Nations Food and Agriculture Organization; 2016, Paris and Rome.

ⁱⁱ “ECB keeps rates unchanged at record low as expected”; Reuters, June 2, 2016. Sarah Speicher-Utsch, “Kommentar: Verführerisch über niedrige Zinsen”; *Agrarzeitung*, p. 2; May 6, 2016, Frankfurt.

ⁱⁱⁱ **Economic Report 2015**, p. 8; VDMA Agricultural Machinery Association; May 2015, Frankfurt.

^{iv} **2017 Dealer Business Outlook & Trends, Farm Equipment Forecast**, pp. 14, 16, 22; Lessiter Media; 2016, Brookfield, Wisconsin.

^v “Black Sea Nations Snatching U.S. Crown as Top Exporter of Grains”; *Bloomberg News, AgWeb*, July 5, 2016; URL: <http://www.agweb.com/article/black-sea-nations-snatching-us-crown-as-top-exporter-of-grains-blmg/>.

^{vi} European Commission, Director General for Agriculture and Rural Development; “Rural Development 2014-2020”. November 18, 2016, Brussels. URL: http://ec.europa.eu/agriculture/rural-development-2014-2020/index_en.htm

^{vii} Ibid.

^{viii} U.S. Department of Commerce, International Trade Administration, U.S. Commercial Service.

^{ix} U.S. Bureau of the Census, 2014 Annual Survey of Manufacturers.

^x U.S. Department of Labor, Bureau of Labor Statistics; Current Employment Statistics, “Table B-1a. Employees on nonfarm payrolls by industry sector and selected industry detail, seasonally adjusted.” URL: <http://www.bls.gov/web/empsit/ceseeb1a.htm>.

^{xi} Ibid., “Industries At A Glance, Machinery Manufacturing: NAICS 333”; URL: <https://data.oecd.org/interest/long-term-interest-rates-forecast.htm#indicator-chart>.

^{xii} United States Department of Commerce, Bureau of the Census, Foreign Trade Division; TPIS Database: USHS EXPORTS, Revised Statistics for 1989-2014, Unrevised for 2015-2016.

^{xiii} United Nations COMTRADE Database; TPIS Database: UNHS IMPORTS.

^{xiv} Philip Nonnemacher, “Global markets decreased by seven percent in 2015”; VDMA Agricultural Machinery, July 19, 2016, Frankfurt.

^{xv} FAO Food Price Index; United Nations Food and Agricultural Organization; September 2016.

<http://www.fao.org/worldfoodsituation/foodpricesindex/en/>.

^{xvi} **OECD-FAO Agricultural Outlook 2016-2025**; op.cit.

^{xvii} Ibid.

^{xviii} Ibid., Executive Summary.

^{xix} **World Agricultural Supply and Demand**, #557; U.S. Department of Agriculture, Washington, DC; September.

^{xx} **OECD-FAO Agricultural Outlook 2016-2025**; Op.cit.

^{xxi} OECD; “Long Term Interest Rate Forecasts”; URL:

<https://data.oecd.org/interest/long-term-interest-rates-forecast.htm#indicator-chart>. Long-term interest rates refer to government bonds maturing in ten years. Rates are mainly determined by the price charged by the lender, the risk from the borrower and the fall in the capital value. Long-term interest rates are generally averages of daily rates, measured as a percentage. These interest rates are implied by the prices at which the government bonds are traded on financial markets, not the interest rates at which the loans were issued. In all cases, they refer to bonds whose capital repayment is guaranteed by governments. Long-term interest rates are one of the determinants of business investment. Low long-term interest rates encourage investment in new equipment and high interest rates discourage it. Investment is, in turn, a major source of economic growth.

“Short Term Interest Rate Forecasts”; URL: <https://data.oecd.org/interest/short-term-interest-rates-forecast.htm#indicator-chart>; October 3, 2016. Short-term interest rates forecast refers to projected values of three-month money market rates. It is measured as a percentage. Forecast data are calculated by making an overall assessment of the economic climate in individual countries and the world economy as a whole, using a combination of model-based analyses and statistical indicator models.

^{xxii} “ECB keeps rates unchanged at record low as expected”; June 2, 2016; Reuters. <http://finance.yahoo.com/news/ecb-keeps-rates-unchanged-record-115642523.html>. “Kommentar: Verführerisch, Sarah Speicher-Utsch über niedrige Zinsen”; Sarah Speicher-Utsch; May 6, 2016; *Agrarzeitung*.

^{xxiii} International Monetary Fund; “Exchange Rate Archives by Month”; Washington, DC; URL:

http://www.imf.org/external/np/fin/data/params_mth.aspx

^{xxiv} United States Department of Commerce, Bureau of the Census, Foreign Trade Division; TPIS Database: USHS EXPORTS, Revised Statistics for 1989-2014, Unrevised for 2015-2016.

^{xxv} Office of the U.S. Trade Representative, **2016 National Trade Estimate Report**, Pp. 23-36, 51-60, 387-394; Washington, DC, April 2016.

^{xxvi} Ibid., Pp. 26, 53-54, 390.

^{xxvii} Ibid., P. 389.

^{xxviii} Ibid. P. 140.

^{xxix} Office of the U.S. Trade Representative, **2016 Special 301 Report**, P.1; Washington, DC, April 2016.

^{xxix} Ibid., P.3.

GERMANY

The largest destination for U.S. agricultural equipment exports to the European Union, Germany is a high volume, low risk market. U.S. exports to Germany grew 12.1 percent in the first six months of 2016. Expectations for product quality, technological sophistication, and reliability are extremely high. The recent growth in U.S. exports has been led by a robust but unexpected increase in shipments of equipment for grains, oilseeds, and other commodity crops—and by increased shipments of tractor parts, engines, and engine parts. Extremely low interest rates in this Eurozone country boost prospects for U.S. exports.

Overall
Rank:

1

Opportunities

- **Precision Agriculture** – Across all major OEM categories, not only for application on individual machines but for networking with the rest of the value chain.
- **Grain, Oilseed, and Other Commodity Crop Equipment** – Germany is already Europe’s largest producer of oilseeds, rye, barley, and potatoes; and second-largest producer of sugar beets, wheat, oats and other grains. Deregulation of sugar production in 2017 is expected to result in more efficient German producers expanding their dominant position in this crop sector.
- **Tractor Parts, Engines, and Engine Parts** – Germany’s own formidable agricultural equipment industry remains an attractive market for U.S. suppliers of parts and components—if they can meet the demanding technical requirements.
- **Equipment for Produce and High-Value Crops** – This relatively small sub-sector has shown consistent growth for at least a decade, and is unaffected by global ag commodity prices.

Data and Discussion

From 2012 to 2015, the German market for U.S. agricultural equipment exports declined at about the same rate as U.S. exports globally, although the rate of decline slowed in 2015 in contrast to U.S. exports overall. This pattern changed in 2016, when total U.S. exports to Germany grew 12.1 percent from January through June—even as U.S. exports to the world declined a further 11.7 percent. All major categories of OEM equipment saw increased shipments, with the exception of products for raising livestock. Tractor parts, engines, and engine parts also registered significant growth.ⁱ

Leading the way in terms of both volume and the rate of growth was equipment for cultivating grain, oilseeds, and other commodity crops, which grew 24.5 percent in the first six months of 2016 over the previous year, accounting for 33.7 percent of total U.S. exports. Tractor parts, engines, and engine parts grew 33 percent from 2015, representing 18.0 percent of U.S. exports. Low- and medium-horse power tractors, less than five percent of U.S. exports to Germany, nevertheless grew at a robust rate of 24.3 percent following even more dramatic

performance in 2015. Exports of mowers and related equipment, equipment for produce and high-value crops, and agricultural sprayers grew at more modest rates.ⁱⁱ

The only major export category to decline in 2016 was equipment for raising livestock, which fell 40 percent in the first six months of the year.

Technology

German farmers do business in a densely populated country where land is arguably the scarcest resource. Technologies for making the most of this resource, as well as other production inputs, have long been a high priority for German farmers. Increasingly, both the German private and public sectors are turning to digital technologies to optimize agricultural production.

The emphasis on digital technology extends well beyond equipping individual machines with IT hardware and software, sensors, and other technology. Both the German private sector and the German Government are calling for construction of a rural broadband infrastructure that would enable the eventual networking of the entire agribusiness value chain. While this infrastructure is not yet in place, U.S. exporters should be prepared to meet increasing demand for sophisticated digital technologies in the German market.ⁱⁱⁱ

Ag Economy Fundamentals

Producer prices for most of the country's leading agricultural commodities are likely to fall during 2017-18.^{iv} Anticipated rates of decline vary from 1.8 and 1.9 percent for wheat and other coarse grains, respectively, to 4.9

Germany: U.S. Exports at a Glance

Equipment Types	2015 Exports U.S.\$ Millions	Percent of Ag Equipment Exports	Change 2012-15	Change Jan.-June 2016
For Grain, Oilseeds, & other Commodity Crops ---	\$128.9	33.8%	-16.1%	24.5%
Mowers & Power Equipment ---	128.4	33.6%	-4.2%	3.8%
Tractor Parts, Engines & Engine Pts. ---	68.7	18.0%	-7.5%	33.0%
For Raising Livestock ---	17.7	4.6%	249.5%	24.3%
Low- & Medium-HP Tractors ---	17.6	4.6%	-8.3%	-40.1%
For Produce & High Value Crops ---	15.0	3.9%	3.7%	3.2%
Sprayers ---	2.7	0.7%	-30.1%	2.2%
<u>Other</u>	<u>2.9</u>	<u>0.8%</u>	<u>14.6%</u>	<u>-68.0%</u>
TOTAL	\$381.9	100.0%	-8.5%	12.1%

percent for poultry meat. Exceptions are pork and dairy products, which are projected to rise at rates of 8.7 and 2.5 percent, respectively.

The loss of Russia as an export market for many German ag products since 2014 has not helped the German agricultural economy. The Russian Government imposed sanctions in August 2014 against a wide range of European and U.S. food imports, in retaliation for sanctions imposed the U.S. and the EU over the conflict in Ukraine.^v Subsequently, German agricultural exports to Russia fell 52 percent, and Russia dropped from being Germany's second-largest non-EU market for such products in 2013 to fifth-largest in 2015—a decline in value of more than \$1 billion in nominal terms.^{vi}

The on-going crisis in the German dairy sector—part of the larger European dairy crisis, with production costs far exceeding the prices farmers receive for their milk—accounts for the sharp drop in U.S. exports of livestock equipment. In 2015, the decline in shipments of farm dairy equipment accounted for more than the total value of the livestock sub-sector's decline in 2015 (exports of some other livestock-related products increased, partially offsetting the difference). Low prices, overproduction, and increasing debt continue to plague Germany's dairy farmers.^{vii}

In response to the current crisis—which followed on the elimination of EU dairy production quotas in 2015 and the imposition of Russian sanctions against EU dairy products—the European Commission in September 2015 and again in July 2016 announced aid packages for the dairy sector totaling €1 billion.^{viii} The German Federal Ministry of Food and Agriculture followed suit in November 2016, announcing a €116 million “Milk Package” which combined a “liquidity subsidy” with limits on the volume of production.^{ix} Whether these measures will stabilize Germany's dairy sector remains to be seen. In the meantime, the trend of German farmers exiting dairy production and shifting to

crops such as grains, sugar beets, or oilseeds may also contribute to increased U.S. exports of equipment for grains, oilseeds, and other commodity crops.^x

Exceptionally low interest rates, while they last, appear to be having a positive impact on U.S. exports. The European Central Bank (ECB) overnight lending rate—the ECB's rate for overnight deposits from commercial banks—is negative and currently stands at -0.4 percent.^{xi} The OECD projects a short-term interest rate of -0.3^{xii} and a long-term interest rate of 0.1 percent for Germany for 2017.^{xiii} In July 2016, the German-government affiliated Agricultural Rentenbank offered an effective 10-year fixed rate of 1.0 percent on a 30-year loan for its most preferred customers.^{xiv} A number of German commercial banks specialize in services for the agribusiness sector, as well including DZ Bank, Nord/LB, Bremer Landesbank, DKB, and akf Bank.^{xv}

Challenges and Obstacles

The United States and the 28 Member States of the EU share the largest and most complex economic relationship in the world. Trade and investment flows between the United States and the EU are a key pillar of prosperity on both sides of the Atlantic. Nevertheless, U.S. exporters still face persistent barriers to entering, maintaining, or expanding their presence in certain sectors of the EU market.

As a member of the European Union, Imports of agricultural equipment into Germany must comply with the extensive EU regulatory regime. U.S. agricultural equipment exporters must ensure their products receive the “CE” mark in order to sell in Germany. U.S. products must also comply with EU regulations such as REACH (Registration, Evaluation, Authorization and Restrictions of Chemicals), WEE (the Waste Electrical and Electronic Equipment Directive), RoHS (the Restriction of Hazardous Substances Directive), and others. See the links below for more detailed information.

The EU standards and conformity assessment regimes—integral to obtaining the CE mark—present a variety of challenges for U.S. exporters. Products sold in the EU must comply with relevant European legislation. If a manufacturer uses European regional standards (called European harmonized standards or ENs), its products are presumed to be in compliance with the requirements. The CE mark is applied to products that conform to the relevant EN standard, or to certain “international” standards as defined by the EU (from the ISO, IEC, or ITU).

The CE mark indicates that the product complies with EU legislation, and is able to move freely within the European single market. While it is possible, theoretically, to use other standards to meet essential requirements, U.S. manufacturers report that in practice the costs and uncertainty associated with not using an EN or EU-recognized international and demonstrating that the alternative standards fulfill essential requirements can be prohibitive.^{xvi}

Germany's own regulations and bureaucratic procedures can be a difficult hurdle for companies wishing to enter the market and require close attention by U.S. exporters. Complex safety standards, not normally discriminatory but sometimes zealously applied, complicate access to the market for many U.S. products. U.S. suppliers are well advised to do their homework thoroughly and make sure they know precisely which standards apply to their product and that they obtain timely testing and certification.^{xvii} The U.S. Government Country Commercial Guides for Germany and the European Union (see links below) can provide more detailed information for interested U.S. exporters.

For more information, see the:

- **Country Commercial Guide for Germany:**[https://www.export.gov/article?series=a0pt0000000PAtqAAG&type=Country_Commercial_kav](https://www.export.gov/article?series=a0pt0000000PAtqAAG&type=Country_Commercial_kav;);

- **Country Commercial Guide to the European Union:**
https://www.export.gov/article?series=a0pt0000000PAtkAAG&type=Country_Commercial_kav;
- **The 2016 National Trade Estimate Report:**
<https://ustr.gov/sites/default/files/2016-NTE-Report-FINAL.pdf>;
- **German Agricultural Society (Deutsche Landwirtschaft Geselleschaft):**
<http://www.dlg.org/home-de.html>
- **German Federal Ministry of Food and Agriculture:**http://www.bmel.de/EN/Homepage/homepage_node.html

Trade Events

Agritechnica 2017

Description: The world’s largest agricultural equipment exhibition, Agritechnica features machinery, equipment, and related goods and services for use in raising in crops.

Location: Hanover, Germany

Dates: November 12-18, 2017.

Website: <https://www.agritechnica.com/en/>

EuroTier 2018

Description: A leading global exhibition for machinery, equipment, and related good and services for use in cultivating livestock, milling animal feed, and bio-mass energy production.

Location: Hanover, Germany

Dates: Second week of November, exact dates November 13-16, 2018

Website: <https://www.eurotier.com/en/>

ⁱ United States Department of Commerce, Bureau of the Census, Foreign Trade Division, TPIS Database: USHS EXPORTS, Revised Statistics for 1989-2014, Unrevised for 2015-2016.

ⁱⁱ Ibid.

ⁱⁱⁱ Dr. Bernd Scherer, Manager of the VDMA Agricultural Machinery Association; "Die digitale Agrarwende bietet Chancen"; *Agrarzeitung*, July 29, 2016; p. 26. Christian Schmidt, Federal Minister for Food and Agriculture; "Im Fokus: Chancen der Digitalisierung"; *Landwirtschaft verstehen*, Bundesministerium für Ernährung und Landwirtschaft; May 2016. Hubertus Paetow, Chairman of the DLG Test Center for Technology and Operating Methods; "Landwirtschaft 4.0 lässt auf sich warten"; *DLG-Mitglieder-Newsletter 41/2016*; Deutsche Landwirtschaft Gesellschaft.

^{iv} *OECD-FAO Agricultural Outlook 2016-2025*, Executive Summary, pp. 1-4. Paris and Rome, 2016.

^v Neil MacFarquhar and Alison Smale, "Russia Responds to Western Sanctions With Import Bans of Its Own"; *New York Times*; August 7, 2014.

^{vi} United Nations COMTRADE Database TPIS Database: UNHS IMPORTS.

^{vii} Yvan Polet, *Global Agricultural Information Network*, "A Perfect Storm for EU Dairy Prices"; U.S. Department of Agriculture, Foreign Agriculture Service; August 4, 2015.

^{viii} Emmet Livingstone, "Europe offers €500 million to help dairy farmers"; *Politico*; July 15, 2016. URL: <http://www.politico.eu/article/europe-awaits-last-ditch-effort-to-save-its-milk-farms-commission-overproduction/>

^{ix} "Statement von Bundesminister Christian Schmidt zum Gentechnikgesetz, Milchpaket und Klimaschutzplan"; Bundesministerium für Ernährung und Landwirtschaft; November 2, 2016.

^x *AgrarZeitung*, "Milchkrise weitet sich aus"; July 26, 2016; page 1.

^{xi} European Central Bank, March 16, 2016; officially the "Deposit Facility Rate." The deposit facility rate is one of the three interest rates the ECB sets every six weeks as part of its monetary policy. The rate defines the interest banks receive for depositing money with the central bank overnight. Since June 2014, this rate has been negative. URL: <https://www.ecb.europa.eu/explainers/tell-me/html/what-is-the-deposit-facility-rate.en.html>.

^{xii} OECD, Short-term interest rates forecast. Short-term interest rates are the rates at which short-term

borrowings are effected between financial institutions or the rate at which short-term government paper is issued or traded in the market. Short-term interest rates are generally averages of daily rates, measured as a percentage. Short-term interest rates are based on three-month money market rates where available. Typical standardized names are "money market rate" and "treasury bill rate". URL: <https://data.oecd.org/interest/short-term-interest-rates-forecast.htm#indicator-chart>.

^{xiii} OECD, Long-term interest rates forecast. Long-term interest rates refer to government bonds maturing in ten years. Rates are mainly determined by the price charged by the lender, the risk from the borrower and the fall in the capital value. Long-term interest rates are generally averages of daily rates, measured as a percentage. These interest rates are implied by the prices at which the government bonds are traded on financial markets, not the interest rates at which the loans were issued. In all cases, they refer to bonds whose capital repayment is guaranteed by governments. Long-term interest rates are one of the determinants of business investment. Low long-term interest rates encourage investment in new equipment and high interest rates discourage it. Investment is, in turn, a major source of economic growth. URL: <https://data.oecd.org/interest/long-term-interest-rates-forecast.htm#indicator-chart>.

^{xiv} *Agrarzeitung*, "Die etwas andere Bank"; page 30; July 29, 2016.

^{xv} Ibid., "Viele banken haben Agrarkunden im Visier"; page 29.

^{xvi} Ibid. P. 140.

^{xvii} U.S. Department of Commerce, U.S. Department of State: *Country Commercial Guide* for Germany; July 22, 2016.

POLAND

Overall Rank:
2

Poland is a low-risk, moderate-sized European agricultural equipment market that has grown steadily in recent years, despite the decline in global commodity prices. Poland is able to compete successfully in EU agricultural markets and has a strong position as a producer and exporter of a variety of crops. On-going modernization and consolidation of Poland’s agricultural economy continues to present opportunities for U.S. exporters.

Opportunities

- **Equipment for Produce and High-Value Crops** – Poland produces and exports a diverse selection of fresh fruits and vegetables. Equipment for this sector is a relatively small but very successful U.S. ag equipment export sub-sector.
- **Grain, Oilseed, and Other Commodity Crop Equipment** – The growing pork and poultry sectors will need more corn and other fodder in 2017-2018.
- **Tractor Components and Parts** – Domestic Polish tractor and other self-propelled equipment manufacturers present opportunities for U.S. manufacturers in this sub-sector.
- **Livestock Equipment** – The pork and poultry sectors are growing and present opportunities for U.S. exporters.
- **Precision Agriculture** – Technology to enhance productivity and optimize the use of ag inputs is needed across the Polish ag economy.

Data and Discussion

Exports of U.S. agricultural equipment to Poland have grown at a modest pace over the last decade. In 2015, U.S. exports were worth \$73.4 million. While still below the peaks reached in 2008 and 2010, they increased steadily from 2012 through 2015 and jumped by nearly 15 percent in the first half of 2016.

The United States was the country’s 10th-largest source of agricultural equipment imports in 2015 and had an import market share of 3.9 percent. Most Polish imports are from other EU countries and China. The country also has a small but dynamic ag equipment manufacturing industry that sells to both the domestic and export markets.

Poland’s agricultural economy has performed successfully since the end of communism in 1989 and adapted well to the country’s membership in the EU. The small size of Polish farms (average: 7.8 ha) and the ag sector’s relatively low productivityⁱ mean that this market has further room to grow as ag producers consolidate and modernize their operations.

Equipment for cultivating grain, oilseeds, and other commodity crops dominate U.S. exports to Poland, worth \$33.2 million and accounting for 45.2 percent of the total in 2015. Exports of these products have declined along with commodity prices, but at a noticeably slower rate than total U.S. exports in this category.

Exports of tractor parts worth \$17 million made up more than 23 percent of U.S. shipments in 2015. This follows a surge in U.S. exports of low- and medium-horse power tractors the previous year. Equipment for cultivating

produce and other high-value crops, worth \$4 million, has shown sustained double-digit growth through the last decade through the first half of 2016.ⁱⁱ

Although exports of equipment for livestock have declined overall in recent years, sales of poultry-keeping equipment have grown strongly and steadily for the last decade, into 2016.

Technology

The technology needs of Polish farmers are diverse. The country's ag economy is making on-going progress toward larger-scale commercial production and greater productivity—simultaneously shifting away from subsistence agriculture and labor-intensive farming practices.

Precision agricultural technologies increasingly will be in demand as Polish farms grow in size and technological sophistication. More

basic mechanization is still underway, as well, supporting the strong growth in exports of small- and medium-horsepower tractors. To remain competitive in EU agricultural markets, technology that will enable greater productivity and quality control in fresh produce, pork, and poultry production will also be needed.

Poland also has a small but increasingly sophisticated, export-oriented domestic agricultural equipment industry. Poland exported \$937 million worth of agricultural equipment in 2015. Major export markets for Polish ag equipment include Germany and Ukraine, other EU markets and Russia.ⁱⁱⁱ U.S. parts and component suppliers that can enhance the productivity, competitiveness of Polish equipment will likely find opportunities in Poland.

Local tractor manufacturers include Pronar, Farmtrac, Crystal Traktor, and Ursus. Polish

Poland: U.S. Exports at a Glance

Equipment Types	2015 Exports U.S.\$ Millions	Percent of Ag Equipment Exports	Change 2012-15	Change Jan.-June 2016
For Grain, Oilseeds, & other Commodity Crops ---	\$33.2	45.2%	-1.8%	-6.1%
Tractor Parts, Engines & Engine Pts. ---	17.0	23.2%	85.9%	186.1%
Mowers & Power Equipment ---	9.2	12.6%	-14.5%	16.2%
For Raising Livestock ---	6.9	9.3%	-4.4%	-18.4%
For Produce & High-Value Crops ---	4.0	5.4%	20.4%	44.5%
Low- & Medium-HP Tractors ---	2.8	3.9%	790.7%	-1.1%
Sprayers ---	0.2	0.3%	-4.6%	64.0%
<u>Other</u>	<u>0.1</u>	<u>0.1%</u>	<u>-38.0%</u>	<u>934.6%</u>
TOTAL	\$73.4	100.0%	3.3%	14.6%

companies produced 3,551 agricultural tractors in 2014, mostly in the 24-50 hp range. Production of larger tractors, above 120 hp, is small but growing.^{iv}

CNH Industrial manufactures combine harvesters in Poland for both the domestic market and for export. Other manufacturers produce specialized harvesters for vegetables and fruits; self-propelled, towed, and tractor-mounted sprayers; mowers; a variety of agricultural implements; and other equipment.^v

Ag Economy Fundamentals

Poland is a significant European producer of a diverse range of agricultural products. The country is the EU's largest producer of both poultry and apples, second-largest grower of potatoes—after Germany—and ranks third in sugar beets, rapeseed, and pork.^{vi} Other major crops include wheat, rye, triticale, oats, cruciferous vegetables, carrots, onions, and cherries. Poultry and milk are also produced in commercially significant quantities.^{vii}

The Polish agricultural economy is projected to grow modestly in 2017 and 2018, by 1.4 percent and 1.3 percent respectively. Private consumption—likely to support continued growth in the fresh produce sector—is projected to increase 2.7 percent in 2017 and 3.0 percent in 2018. Producer prices are expected to rise slightly over the same period, as well.^{viii} Production is expected to grow 10-15% annually over the 2017-2018 period, creating opportunities for equipment suppliers.^{ix}

Interest rates are projected to remain low, although not as low as they are currently in the Eurozone countries. The OECD projects a short-term interest rate of 1.8^x and a long-term interest rate of 3.1 percent for Poland for 2017.^{xi}

Poland is not heavily exposed to global markets for commodities such as corn, soybeans, wheat, cotton, or rice. Wheat is the country's largest

grain crop, but does not dominate the agricultural economy.^{xii} Corn production is rising and prices are likely to increase along

with expansion of Polish pork production.^{xiii} Poland is one of many countries affected by the 2015-2016 European dairy crisis, when production costs throughout the EU far exceeded the prices farmers receive for their milk. U.S. exporters have not shipped farm dairy equipment to Poland in recent years. Exports of parts have declined sharply as well, along with certain types of fodder management equipment.

Weak prices, overproduction, and low productivity have been major problems for the Polish dairy sector.^{xiv} In late 2016 however, the situation stabilized somewhat and milk prices began to grow. Due to low production costs, Poland may actually benefit from the elimination of EU dairy quotas as producers in higher-cost countries shift to other commodities. Also, Poland's growing number of larger dairy farms may create opportunities for suppliers of milking robots, which are currently sourced from elsewhere in Europe.^{xv}

In response to the current crisis—which followed on the elimination of EU dairy production quotas in 2015 and the imposition of Russian sanctions against EU dairy products—the European Commission in September 2015 and again in July 2016 announced aid packages for the dairy sector totaling €1 billion.^{xvi} Given the growing competitiveness of the pork and poultry sectors, it is likely that Polish farmers will follow their counterparts elsewhere in the EU and exit dairy production in favor of other ag products. Exports of U.S. pork, poultry, and fodder equipment may benefit from such a shift.^{xvii}

As an EU member state, Poland has duty-free access to the rest of the 28-country single market, and to EU rural development funds. Polish farmers have made extensive use of these funds in modernizing their operations.

Challenges and Obstacles

As a member of the European Union, Imports of agricultural equipment into Poland must comply with the extensive EU regulatory regime. U.S. agricultural equipment exporters must ensure their products receive the “CE” mark in order to sell in Poland. U.S. products must also comply with EU regulations such as REACH (Registration, Evaluation, Authorization and Restrictions of Chemicals), WEE (the Waste Electrical and Electronic Equipment Directive), RoHS (the Restriction of Hazardous Substances Directive), and others. See the links below for more detailed information.

The EU standards and conformity assessment regimes—integral to obtaining the CE mark—present a variety of challenges for U.S. exporters. Products sold in the EU must comply with relevant European legislation. If a manufacturer uses European regional standards (called European harmonized standards or ENs), its products are presumed to be in compliance with the requirements. The CE mark is applied to products that conform to the relevant EN standard, or to certain “international” standards as defined by the EU (from the ISO, IEC, or ITU).

The CE mark indicates that the product complies with EU legislation, and is able to move freely within the European single market. While it is possible, theoretically, to use other standards to meet essential requirements, U.S. manufacturers report that in practice the costs and uncertainty associated with not using an EN or EU-recognized international and demonstrating that the alternative standards fulfill essential requirements can be prohibitive.^{xviii}

Poland has made great strides towards improving its commercial climate, but U.S. and companies still encounter an inefficient commercial court system and a somewhat rigid labor code, as well as being faced with bureaucratic red tape and a burdensome tax system. Weak transportation infrastructure, in

particular the road and railway networks, increases the cost of doing business by limiting access to much of the domestic market and diminishing the country’s potential as a regional distribution hub.^{xix}

For more information, see the:

- **Country Commercial Guide for Poland:** https://www.export.gov/article?series=a0pt0000000PAuiAAG&type=Country_Commercial_kav
- **Country Commercial Guide to the European Union:** https://www.export.gov/article?series=a0pt0000000PAtkAAG&type=Country_Commercial_kav
- **The 2016 National Trade Estimate Report:** <https://ustr.gov/sites/default/files/2016-NTE-Report-FINAL.pdf>
- **Polish Chamber of Agriculture Machinery and Equipment:** <http://www.pigmieur.pl/>
- **Institute of Agricultural and Food Economics—National Research Institute:** <http://www.ierigz.waw.pl/>
- **Institute of Technology and Life Sciences:** <http://www.itp.edu.pl>

Trade Events – Domestic:

Agrotech 2017

Description: A large, indoor agricultural equipment exhibition attracting international numerous international exhibitors.

Location: Kielce, Poland

Dates: March 17-19, 2017

Website: <http://www.targkielce.pl/en/22nd-international-fair-of-agricultural-techniques-agrotech,7699.htm>

Centralne Targi Rolnicze CTR 2017

Description: Held for the first time in 2016, CTR features machinery and equipment for the crop and livestock production, processing and storage of agricultural products, as well as other goods and services for the agricultural sector, including logistics and financial services.

Location: Warsaw, Poland

Dates: October 2017; exact dates TBD.

Website: <http://centralnetargirolnicze.pl/pl/>

Trade Events – International

Agritechnica 2017

Description: The world's largest agricultural equipment exhibition, Agritechnica is an important event for the Polish market. The show features machinery, equipment, and related goods and services for use in raising in crops.

Location: Hanover, Germany

Dates: November 12-18, 2017.

Website: <https://www.agritechnica.com/en/>

EuroTier 2018

Description: A leading global exhibition for machinery, equipment, and related good and services for use in cultivating livestock, milling animal feed, and bio-mass energy production. Like Agritechnica, EuroTier is an important event for reaching the Polish agricultural equipment market.

Location: Hanover, Germany

Dates: Second week of November, exact dates November 13-16, 2018

Website: <https://www.eurotier.com/en/>

ⁱ Business Monitor Online; Agribusiness Service; SWOT – Poland – Q4; October 7, 2016.

ⁱⁱ United States Department of Commerce, Bureau of the Census, Foreign Trade Division, TPIS Database: USHS EXPORTS, Revised Statistics for 1989-2014, Unrevised for 2015-2016.

ⁱⁱⁱ U.S. Department of Commerce; United Nations COMTRADE Database TPIS Database: UNHS EXPORTS.

^{iv} Dr. Jan Pawlak, "Rynek maszyn rolniczych"; **Rynek Środków Produkcji dla Rolnictwa**. Instytut Ekonomiki Rolnictwa I Gospodarki Żywnościowej—Państwowy Instytut Badawczy (Institute of Agricultural and Food Economics—National Research Institute). Warsaw, Poland; April 2016.

^v Ibid.

^{vi} European Commission, Directorate General for Agriculture and Rural Development; **Agriculture in the European Union: Market Information**. Brussels, Belgium; December 2014

^{vii} Business Monitor Online, SWOT, op.cit.

^{viii} Economist Intelligence Unit; November 2, 2016.

^{ix} Commercial Section, U.S. Embassy/Warsaw; January 2017.

^x OECD, Short-term interest rates forecast. Short-term interest rates are the rates at which short-term borrowings are effected between financial institutions or the rate at which short-term government paper is issued or traded in the market. Short-term interest rates are generally averages of daily rates, measured as a percentage. Short-term interest rates are based on three-month money market rates where available. Typical standardized names are "money market rate" and "treasury bill rate". URL: <https://data.oecd.org/interest/short-term-interest-rates-forecast.htm#indicator-chart>.

^{xi} OECD, Long-term interest rates forecast. Long-term interest rates refer to government bonds maturing in ten years. Rates are mainly determined by the price charged by the lender, the risk from the borrower and the fall in the capital value. Long-term interest rates are generally averages of daily rates, measured as a percentage. These interest rates are implied by the prices at which the government bonds are traded on financial markets, not the interest rates at which the loans were issued. In all cases, they refer to bonds whose capital repayment is guaranteed by governments. Long-term interest rates are one of the determinants of business

investment. Low long-term interest rates encourage investment in new equipment and high interest rates discourage it. Investment is, in turn, a major source of economic growth. URL:

<https://data.oecd.org/interest/long-term-interest-rates-forecast.htm#indicator-chart>.

^{xii} OECD/FAO Agricultural Outlook

^{xiii} Business Monitor Online; Grains Outlook; op.cit.

^{xiv} Yvan Polet, **Global Agricultural Information Network**, "A Perfect Storm for EU Dairy Prices"; U.S. Department of Agriculture, Foreign Agriculture Service; August 4, 2015.

^{xv} Commercial Section, U.S. Embassy/Warsaw; January 2017. European Commission, Directorate General for Agriculture and Rural Development; **Short Term Outlook for EU arable crops, dairy and meat markets – Autumn 2016**. Brussels, Belgium; 2016.

^{xvi} Emmet Livingstone, "Europe offers €500 million to help dairy farmers"; **Politico**; July 15, 2016. URL: <http://www.politico.eu/article/europe-awaits-last-ditch-effort-to-save-its-milk-farms-commission-overproduction/>

^{xvii} **AgrarZeitung**, "Milchkrise weitert sich aus"; July 26, 2016; page 1.

^{xviii} Office of the U.S. Trade Representative, **2016 National Trade Estimate Report**, Pp. 23-36, 51-60, 387-394; Washington, DC, April 2016..

^{xix} U.S. Department of Commerce, U.S. Department of State; **2016 Country Commercial Guide for Poland**.

MEXICO

The second-largest destination for U.S. agricultural equipment exports, Mexico is a high volume, low risk market. U.S. exports to Mexico grew 7.6 percent in the first six months of 2016, led by shipments of tractor parts, engines and engine parts. Mexico is also a leading market for equipment to fruits and vegetables and other high-value crops, dairy products and meat. The Mexican agricultural economy is expected to grow 4.0 percent per year in both 2017 and 2018, although a weakening Mexican peso relative to the U.S. Dollar is a growing obstacle for U.S. exporters.¹

**Overall
Rank:**

4

Opportunities

- **Tractor Parts, Engines and Engine Parts** – These products currently dominate U.S. exports and support major U.S. and other OEM tractor assembly operations in Mexico. Major component exports (steering, mufflers, radiators, etc.) grew strongly in 2016.
- **Sprayers** – Mexico’s diverse agricultural economy offers many applications for sprayers. Mexico is the largest U.S. export market for ag sprayers.
- **Mowers and Other Power Equipment** – Steady growth has characterized this category over the last decade. This equipment will continue to find widespread application, despite a drop in U.S. exports in 2016.
- **Equipment for Produce and High-Value Crops** – Mexico was a \$123.5 million market for these products in 2015. Drip and micro-irrigation equipment accounts for more than half of U.S. exports of irrigation products.

Data and Discussion

From 2012 to 2015, the Mexican market for U.S. agricultural equipment grew at annual rate of 7.0 percent, even as U.S. exports globally declined at a rate of -8.9 percent. This pattern continued in 2016, when total U.S. exports to Mexico grew 7.6 percent in the first six months of the year. Dominating U.S. exports in terms of

both volume and the rate of growth were tractor parts, engines, and engine parts.ⁱ

Mowers and other power equipment is the largest category of U.S. original equipment exports to Mexico, worth \$127.7 million in 2015. Shipments of these products grew steadily, if undramatically, from 2006 through 2015 at an annual rate of 4.6 percent.ⁱⁱ The diverse applications for these products (agriculture, commercial, government/institutional) and Mexico’s gradually rising wages provide a strong foundation for U.S. exports of these products.ⁱⁱⁱ

Technology

The Mexican market has diverse needs with respect to agricultural technology. With a variety of climates and a large amount of arable land, the country is home to extensive diversified, large-scale commercial agriculture. At the same, many farms are quite small, their productivity is often low, and frequently rely on manual labor. As a result, basic mechanization is still underway.^{iv}

For commercial agriculture, technologies that enable producers to raise quality, increase productivity, and ensure and document food safety are essential. This is especially true for

fresh produce, high-value specialty crops, red meat, poultry, and dairy.

Mexico is the United States’ largest export market for irrigation equipment, with drip and micro-irrigation and related products accounting for fully two-thirds of the total in 2015. U.S. sales of drip and micro-irrigation equipment have held up well in recent years, despite the weakening Mexico peso.^v

Protected and “controlled environment” agriculture is widespread in Mexico. Common greenhouse types include macro- and micro-tunnels, chapel- or multi-span designs, vineyard and high-technology polycarbonate-walled systems—the latter known colloquially as “venlo” or “holandes” (Dutch) structures.^{vi} U.S. exporters of equipment for commercial greenhouse use have a geographic advantage over their European competitors—which typically do not maintain large inventories in

Mexico—in being able to ship both whole goods and spare parts quickly and inexpensively from the United States. These products include fans and other climate-control and ventilation equipment, pumps, and control systems. Throughout the agricultural value chain, Mexican ag producers require specialized IT systems to document food safety and comply with U.S. and other countries’ sanitary requirements for food imports.

Ag Economy Fundamentals

Red meat, high-value crops, poultry and eggs, and dairy products are major components of Mexico’s agricultural production.^{vii} Demand for Mexican agricultural products is driven both by rising domestic demand and by exports. Mexico’s relatively large middle class and growing population of some 110 million are served by developing retail sector that enables widespread domestic distribution of Mexican agricultural products.^{viii}

Mexico: U.S. Exports at a Glance

Equipment Types	2015 Exports U.S.\$ Millions	Percent of Ag Equipment Exports	Change 2012-15	Change Jan.-June 2016
Tractor Parts, Engines & Engine Pts. ---	\$614.4	50.8%	15.2%	29.1%
Mowers & Power Equipment ---	127.7	10.6%	3.5%	-14.2%
For Produce & High Value Crops ---	123.5	10.2%	3.9%	-9.8%
For Grain, Oilseeds, & other Commodity Crops ---	116.2	9.6%	-11.8%	-6.8%
For Raising Livestock ---	94.4	7.8%	9.8%	-30.3%
Sprayers ---	78.4	6.5%	8.3%	16.7%
Low- & Medium-HP Tractors ---	16.0	1.3%	-12.4%	-7.3%
<u>Other</u>	<u>39.0</u>	<u>3.2%</u>	<u>3.6%</u>	<u>-9.1%</u>
TOTAL	\$1,209.6	100.0%	7.0%	7.6%

Since the mid-1990s Mexico has negotiated an extensive network of Free Trade Agreements (FTAs) and other bilateral and multi-lateral trade pacts. These agreements now cover trade with most of the Western Hemisphere, Europe, Japan, and Israel.^{ix} The North American Free Trade Agreement (NAFTA) remains the most important of these agreements and the United States accounted for 81.1 percent of total Mexican exports in 2015.^x Mexican exports of fresh produce and other high-value crops, red meat, dairy products, and poultry and eggs were worth more than \$12 billion in 2015.^{xi}

Major private-sector financial institutions serving the Mexican agricultural economy include Scotia Bank, Banco Nacional de México (BANAMEX), and Santander, among others.^{xii} Mexican Government institutions providing financial services for agribusiness include Fidecomisos Instituidos en Relación con la Agricultura, Fideicomiso de Riesgo Compartido, PROMEXICO, and FINRURAL. The National Fund for Agricultural Development (FND) also provides financial services to Mexican ag producers, including working capital, commodity price insurance, and other risk management services.^{xiii}

For a list of U.S.-based banks active in the Mexican market, particularly U.S. brokers and banks working with Export-Import Bank of the United States programs, please contact Ms. Sylvia Montano (Sylvia.Montano@trade.gov) of the International Trade Administration/U.S. Commercial Service.

Challenges and Obstacles

Mexico's size and diversity are often under-appreciated by U.S. exporters. It can be difficult to find a single distributor or agent to cover this vast market. Also, the Mexican legal system differs in fundamental ways from the U.S. system, so U.S. firms should consult with competent legal counsel before entering into any business agreements with Mexican partners. U.S. Commercial Service offices in

Mexico can conduct background checks on potential Mexican partners.^{xiv}

Mexican customs regulations, product standards and labor laws may present pitfalls for U.S. companies. U.S. Embassy commercial, agricultural, intellectual property rights, standards, and labor officers are available to counsel firms with respect to regulations that affect their particular export product or business interest.^{xv}

Mexican customs procedures continue to be a challenge for U.S. exporters, including insufficient prior notification of procedural changes. Harmonizing the hours of customs operation on the U.S. and Mexican sides of the border has been beneficial, but exporters still face delays due to the lack of pre-clearance procedures.^{xvi}

The banking system in Mexico has shown signs of growth after years of stagnation, but interest rates remain relatively high. In particular, small and medium-sized enterprises (SMEs) find it difficult to obtain financing at reasonable rates despite Mexican Government efforts to increase capital for SMEs. U.S. companies should do thorough due diligence before doing business with a Mexican firm, and be conservative in extending credit and alert to payment delays.

Regarding intellectual property rights (IPR), Mexico was listed on the Watch List in the 2015 Special 301 report. Despite some progress, overall criminal enforcement of IPR is characterized by weak coordination among federal, state, and municipal officials and other problems.^{xvii}

Although there no longer any tariffs on agricultural equipment, Mexico levies a value-added tax (IVA) on most sales transactions, including sales of foreign products. The IVA rate is 16 percent for the entire Mexican territory.^{xviii}

In addition to developing strong working relationships with Mexican partners, it is strongly recommended that U.S. firms use Spanish-language marketing materials and speak Spanish whenever possible while doing business in Mexico. Hiring local staff can help facilitate these relationships and provide U.S. companies with insight on selling in Mexico.^{xix}

NAFTA Rules of Origin, which determine whether specific products qualify for duty-free treatment, can be complex. For a thorough explanation of NAFTA certificates of origin, as well as a “What’s my tariff” tool, see: <http://export.gov/FTA/nafta/index.asp>.

Continued violence involving criminal organizations has created insecurity in some parts of Mexico, including in some border areas. For more detailed information it is strongly recommended that prior to travel to Mexico, see the:

- State Department Travel Warning web site: (http://travel.state.gov/travel/cis_pa_tw/tw/tw_5815.html)

For country specific information on Mexico, see:

- (http://travel.state.gov/travel/cis_pa_tw/cis/cis_970.html)

For more information on doing business in Mexico, see the:

- **Country Commercial Guide for Mexico:** https://www.export.gov/article?series=a0pt0000000PAuRAAW&type=CountryCommercial_kav
- Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA): <http://www.sagarpa.gob.mx>

- Federal Commission for the Protection against Sanitary Risk (COFEPRIS): <http://www.cofepris.gob.mx>
- Mexican Association for Protected Horticulture (AMHPAC): <http://www.amhpac.org>

Trade Events

International Production & Processing Expo 2017, 2018

Description: A large industrial trade show featuring machinery and equipment for raising poultry, milling animal feed, and processing and packaging poultry, eggs, and red meat.

Location: Atlanta, Georgia

Dates: January 31-February 2, 2017; 2018 TBD.

Website: <http://www.ippexpo.com/>

World Ag Expo 2017, 2018

Description: World Ag Expo features machinery and equipment for use in cultivating fresh produce, orchard and vineyard crops, and cotton, as well as for dairy farms and irrigated agriculture.

Location: Tulare, California

Dates: February 14-16, 2017; 2018 TBD.

Website: <http://worldagexpo.com/>

Expoagro Alimentaria 2017, 2018

Description: A leading Mexican trade exhibition featuring machinery, equipment, and related goods and services for a range of agricultural activities, including commercial fruits and vegetable production, greenhouse/shadehouse agriculture, irrigation, and commodity crops.

Location: Irapuato, Guanajuato State, Mexico

Dates: Early November, exact dates TBD.

Website: <http://expoagrogto.com>

ⁱ United States Department of Commerce, Bureau of the Census, Foreign Trade Division; TPIS Database: USHS EXPORTS, Revised Statistics for 1989-2014, Unrevised for 2015-2016.

ⁱⁱ Ibid.

ⁱⁱⁱ Economist Intelligence Unit, “Average nominal wages.”

^{iv} Business Monitor, “Agribusiness – SWOT – Mexico – Q4 2016”; September 5, 2016.

^v United States Department of Commerce, Bureau of the Census, Foreign Trade Division TPIS Database: USHS EXPORTS, Revised Statistics for 1989-2015.

^{vi} Luis Carols Sierra, “Características de diferentes tipos de invernaderos”; *deRiego*, P.28; April-May 2016, Mexico City, Mexico.

^{vii} United Nations Food and Agriculture Organization, Rome.

^{viii} Business Monitor, “Food – SWOT – Mexico – Q4 2016”; September 5, 2016.

^{ix} Economist Intelligence Unit, “Mexico – International Agreements”; June 27, 2016.

^x Economist Intelligence Unit, “Mexico – Regulation: Trade Policy”; June 27, 2016.

^{xi} United Nations COMTRADE Database TPIS Database: UNHS IMPORTS.

^{xii} **Directorio Agroempresarial 2014-2015**, Pp. 89-92; Prerensa Digital SA de CV; 2014, Mexico City, Mexico.

^{xiii} Financiera Nacional de Desarrollo Agropecuario, Rural, Forestal & Pesquero (FND); “Acciones & Programas.”; Mexico City, Mexico. URL: <http://www.gob.mx/fnd>

^{xiv} U.S. Department of Commerce, U.S. Department of State; **Country Commercial Guide** for Mexico; December 2, 2016. URL: https://www.export.gov/article?series=a0pt0000000PAuRAAW&type=Country_Commercial_kav

^{xv} Ibid.

^{xvi} U.S. Trade Representative, **The 2016 National Trade Estimate Report**, Pp. 301-302; Washington, DC, 2016.

^{xvii} Ibid., P. 302.

^{xviii} U.S. Department of Commerce, U.S. Department of State; **Country Commercial Guide** for Mexico.

^{xix} Ibid.

Appendix – Major Equipment Categories

1) Equipment for Cultivating Grain, Oilseeds & Other Commodity Crops

8424819010--SELF-PROPELLED, CENTER PIVOT, IRRIGATION EQUIPMENT
8432100020--MOLDBOARD PLOWS EXCEPT LISTERS
8432100040--DISC PLOWS
8432100060--PLOWS, NESOI
8432210000--DISC HARROWS
8432290040--CULTIVATORS, TRACTOR DRAWN OR FOR TRACTOR MOUNTING
8432290080--CULTIVATORS, WEEDERS AND HOES, NESOI
8432290090--HARROWS AND SCARIFIERS, NESOI
8432300010--PLANTERS AND TRANSPLANTERS
8432300090--SEEDERS
8432400000--MANURE SPREEDERS AND FERTILIZER DISTRIBUTORS
8432800000--AGRIL, HORT, FORSTY MACH FOR SOIL PREP OR CULTIVATE
8432900005--PARTS OF PLOWS
8432900015--PTS OF HARROWS, SCARIFIERS CULTIVATORS, WEEDERS & HOES
8432900030--PTS OF SEED, PLNT, TRNSPLNT, MANUR SPRED, FERTILIZ DIS
8432290060--WALK BEHIND ROTARY TILLERS
8432900080--PTS OF AG, HORT, FORSTY MAC FR SOIL PREP OR CULTIVATE
8433510010--COMBINE HARVESTER-THRESHERS, SELF-PROPELLED
8433510090--COMBINE HARVESTER-THRESHERS, EXCEPT SELF-PROPELLED
8433520000--THRESHING MACH, EXC COMBINE HARVESTER-THRESHERS
8433530000--ROOT OR TUBER HARVESTING MACHINES
8445190040--COTTON GINS
8448320010--PARTS OF COTTON GINS
8701901045--TRCTS, AGRL USE, NEW, PTO (74.6 - 89.5 KW), NESOI
8701901050--TRCTS, AGRL USE, NEW, PTO (89.5 - 104.4 KW), NESOI
8701901055--TRCTS, AGRL USE, NEW, PTO (104.4 - 119.4KW), NESOI
8701901060--TRCTS, AGRL USE, NEW, PTO (119.4 - 134.3KW), NESOI
8701901065--TRCTS, AGRL USE, NEW, PTO OF 134.3KW OR MORE, NESOI

2) **Tractor Parts, Engines & Engine Parts**

8412809000--ENGINES AND MOTORS, NESOI
8412909080--PARTS OF ENGINES AND MOTORS, NESOI
8708800010--SUSPENSION SHOCK ABSORBERS FOR TRACTORS FOR AG USE
8708801000--SUSPENSION SHOCK ABSORBERS FOR TRACTORS FOR AG USE
8708911000--RADIATORS FOR TRACTORS FOR AGR USE
8708921000--MUFFLERS AND EXHAUST PIPES FOR TRACTORS FOR AGR
8708931000--CLUTCHES AND PARTS FOR TRACTORS FOR TRACT, AGRICULT
8708941000--STEERING WHEELS, STEERING COLUMNS AND STEERING BOXS
8708990010--PARTS AND ACCESSORIES NESOI, FOR TRACTORS NESOI
8708990011--PARTS AND ACCESSORIES NESOI, FOR TRACTORS NESOI

3) **Mowers & Other Power Equipment**

8430200030--SNOWBLOWERS, ATTACHMENT TYPE
8430200060--SNOWBLOWERS, EXCEPT ATTACHMENT TYPE
8433110010--ELECTRIC LAWN MOWERS,INC BATTERY OPERATED
8433110020--RIDING MOWERS, OTHER THAN ELECTRIC, UNDER 5.2 KW
8433110030--RID MOWERS,NOT ELEC,5.2KW&OVER BUT UNDER7.46KW
8433110040--RIDING MOWERS, OTHER THAN ELECTRIC,7.46KW AND OVER
8433110050--MOWERS FOR LAWNS, PARKS, ETC., EXC. RIDING, UNDER 3.7KW
8433110060--MOWERS FOR LAWNS, PARKS, ETC., EXC. RIDING OVER 3.7KW
8433190010--GREENS MOWERS
8433190020--MOWERS, GANG CUTTING UNITS
8433190030--MOWERS, RIDING, FOR LAWNS, PARKS OR SPORTS GROUNDS
8433190040--MOWERS,NON RID,GAS POWER, FOR LAWN, PARKS, SPORTS GRN
8433190050--MOWERS FOR LAWN, PARKS OR SPORTS GROUNDS, NESOI
8433200020--MOWERS, ROTARY CUTTER TYPE, TRACTOR DRAWN OR MOUNT
8433200040--MOWERS, TRACT DRAWN, MOUNT, EXC ROTARY CUTTER TYPE
8433200060--MOWERS, INC CUTTER BARS FOR TRACTOR MOUNTING, NESOI
8433901000--PARTS OF MOWERS FOR LAWNS, PARKS OR SPORTS GROUNDS

8433905040--PARTS OF MOWERS, HARVEST & THRESH MACH, NESOI
8467290070--ELECTRIC HAND GRASS AND WEED TRIMMERS/EDGERS
8467895030--GAS POWRED GRASS & WEED TRIM & BUSHCUT, HAND-DIRECT
8467990130--PARTS NESOI, OF GAS POWERED GRASS/WEED TRM,BRSHCUT

4) **Equipment for Raising Livestock**

8421110000--CREAM SEPARATORS
8433300000--HAYING MACHINES OTHER THAN MOWERS
8433400000--STRAW OR FODDER BALERS, INCLUDING PICK-UP BALERS
8433590010--FIELD FORAGE HARVESTERS
8433600010--MACHINES FOR CLEANING, SORTING OR GRADING EGGS
8433905020--PARTS OF HAYING MACHINES AND BALERS
8433905060--PARTS OF MACHINES FOR CLEAN, SORT OR GRADE EGGS
8434100000--MILKING MACHINES
8434900000--PARTS OF MILKING MACHINES AND DAIRY MACHINERY
8436100000--MACHINERY FOR PREPARING ANIMAL FEEDS
8436210000--POULTRY INCUBATORS AND BROODERS
8436290000--POULTRY-KEEPING MACHINERY
8436800040--BARN AND BARNYARD MACHINES
8436910000--PARTS OF POULTRY-KEEP MAC OR POULTRY INCUB & BROOD
8436990040--PARTS OF BARN OR BARNYARD MACHINES
8436990060--PTS OF MAC FOR PREPARE CROPS FR MKT, USE, INC AMN FD

5) **Equipment for Raising Fresh Produce & Other High-Value Crops**

8419310000--DRYERS FOR AGRICULTURAL PRODUCTS
8424819020--OTHER IRRIGATION EQUIP FOR AGRCLTRL OR HORT,INCL L
8433590090--HARVESTING MACHINERY OR THRESHING MACHINERY, NESOI
8433600090--MACH FOR CLEAN, SORT, GRADE, FRUIT OR AGRIL PRODUCE
8436800080--AG,HORT,BE-KEP MAC INC GERMINAT PLT, MECH THERM EQ
8433905080--PARTS OF MACH FOR CLEAN, SORT, GRADE FRUIT AGR PROD
8436800060--MACHINES FOR PREPARING CROPS FOR MARKET OR FOR USE

8436990080--PTS FR AG, HORT, BE-KEP MC INC GERM PLT MEC/THRM EQ

8467895060--HAND-DIR TOOLS FOR AGRICULT OR HORTICULT, NESOI

6) **Agricultural Sprayers**

8424811000--SPRAYERS (EXC SLF-CONTAIN CAP N/OV20LIT), AGRI HORT

8424819040--AGRICULT SPRAYERS, SELF-CONTAINED CAPAC LT 20 LTR

8424819090--AGRICULTURAL OR HORTICULTURAL SPRAY APPL, NESOI

7) **Low- & Medium-Horsepower Tractors**

8701901005--TRCTS, AGRCLT USE, NEW PTO OF LESS 14.9 KW

8701901010--TRCTS, AGRICULTURAL USE, NEW, PTO (14.9-22.4KW)

8701901015--TRCTS, AGRICULTURAL USE, NEW, PTO (22.4-29.8KW)

8701901030--TRCTS, AGR L USE, NEW, PTO (29.8 - 44.8 KW), NESOI

8701901035--TRCTS, AGR L USE, NEW, PTO (44.8 - 59.7 KW), NESOI

8701901040--TRCTS, AGR L USE, NEW, PTO (59.7 - 74.6 KW), NESOI

8) **Other**

8701100000--TRACTORS, PEDESTRIAN CONTROLLED

8701901070--TRCTS, AGR L USE, NEW, EXC TRACK-LAYING AND PTO TYPE

8701901090--TRCTS, AGR L USE, USED, EXC TRACK-LAYING TYPE

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