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Letter from the Editor:

The Agricultural Sector is increasingly complex, especially in the areas associated with the interaction of the biological, ecological and economic systems and disciplines. WEF focuses on issues with relevance and/or importance to the Western United States. To this end, the WEF provides a forum for economists in the western U.S. to participate in such discussions with articles related to food, farms, ranches, resources, institutions, communities and other related topic areas.

Authors are invited and welcome to email article submissions to WEF Editorial Team Leader Matt Stockton, or any of the co-editors at any time, and are encouraged to discuss ideas for articles with editors prior to submission as appropriate. Submissions will only be accepted in MS WORD, with at least two recommendations for potential referees including their contact information. Authors should generally follow the formatting guidelines for the Journal of Resource and Agricultural Economics, http://www.waeaonline.org/publications/jare/submission-guidelines). Articles should be approximately 2,500 words (maximum 3,500) and there is no fee for submission or publication. Generally, articles cover any issue related to natural resources and agriculture, including but not limited to farming, food, policy, community, stakeholders, or the ecosystem with relevance to the western United States. The articles should be written to appeal to the audiences described above. The work is expected to be original, professional and defendable based on current scientific standards. Articles should generally be understandable to any practicing economist and to other professionals with a working knowledge of the issue being focused upon.

Editorial Staff

Matt Stockton - University of Nebraska-Lincoln
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Daniel O’Brien - Kansas State University
By Joe L. Outlaw¹ and Dana L. K. Hoag²

The Western half of the United States is as unique as it is vast. Federal policies and programs have played a major role in developing “The West” from acquiring (part of the Louisiana Purchase), settling (Homestead Act), facilitating commerce (development of the first transcontinental railroad (1863-1968) and Federal Highway Act in 1956) to facilitating agricultural production (Reclamation Act in 1902 and Colorado River Compact) to protecting the natural resources (Federal Regulation of Grazing and Endangered Species Act). This issue is designed to capture the interaction between Federal Policy and the U.S. West through the lens of three distinctly different federal policies and programs, the first, focusing on animal diseases is regulatory in nature, the second focuses on legislative priorities in the 2018 Farm Bill and the last details both regulatory and legislative impacts on agricultural trade.

In this issue we focus on how three national policy programs effect agriculture in the West. Amy Hagerman and Tori Marshall look at Animal Disease Preparedness and Response in the West. They provide an insightful and interesting overview about disease outbreaks that have “rocked” livestock industries, including African Swine Fever, Avian Influenza, Foot and Mouth disease (FMD), and Newcastle disease. While many of us know that these diseases hurt US farmers, industry and consumers, most of us living in the West probably don’t know how we are unique. What lessons do we take from the past to prepare our unique agriculture for future outbreaks? Hagerman and Marshall discuss three issues in preparedness: resource limitations; public perceptions; and business continuity. The need to be prepared is clear. One study showed that a simulated FMD outbreak in a Kansas feedlot could result in culling more than half of cloven-hoofed animals in the surrounding area. Another study found that an FMD outbreak beginning in California could lead to losses between $8.5 million and $13.5 billion. The authors discuss multiple ideas where preparedness could be improved in the West.

In our second contribution, Bart Fischer and Brandon Willis discuss Western Priorities in the 2018 Farm Bill. Every five to seven years, a massive farm policy bill is passed, traditionally called the Farm Bill. The last one was passed in 2018 and was called the Agricultural Improvement Act of 2018. About 3 quarters of the funding goes to nutrition programs. About 16% goes toward commodity programs and insurance, and about 7% goes toward conservation. But western agriculture is very different from the Midwest, South and the East. So, Fischer and Willis help us understand those specific impacts on the west. Several changes to crop insurance and commodity programs effect the west. For example, a change in payment acres could mean an increase in revenue for farmers that move out of the commodity policies and into the conservation stewardship program. On the flip side, land, in the conservation reserve program, and payments, will be reduced, where 65% of contracts are in Western states. Western states are likely to benefit from increased funding for the Regional Conservation Partnership program. Funding was also increased for the Agricultural Conservation Easement Program and for watershed protection and flood prevention. Changes in forestry provisions make it easier to pursue activi-

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ties to protect, restore and improve habitat for greater sage-grouse and mule deer. Funding for Trade promotion was also increased. Finally, the West will benefit from a program for specialty crops research and farmers markets and local food promotion.

Finally, Luis Ribera and Mechel Paggi look at Recent Agricultural Trade Issues and Their Impact on Exports from US Western States. Ribera and Paggi discuss how several trade policy actions in the past few years, such as withdrawal from the Trans Pacific Partnership and renegotiation of NAFTA, have hampered trade. Western states accounted for almost half of US agricultural exports in 2018, mainly tree nuts, fruits, cotton, vegetables, wheat and beef. As a result of retaliatory trade policies, western state agricultural exports to China declined by over 40% in 2018. Farmers lost almost $4 billion in 2019. A changing portfolio of trading reduced potentially harmful losses with China and returns rebounded in late 2019 with new trade deals. The US gov’t instituted the Market Facilitation Program to help producers endure reduced sales. Payments were made to the tune of 50% of 2018 production. In a second round, the US government paid $15-150 per acre depending on the county, adding up to about $20 billion. Western states got about 37%, or about $4 billion, of this relief. This was about 2% of cash receipts for agricultural production.

The uniqueness of the U.S. West dictates that Federal policies and the programs that carry them out have to be tailored to the region. That is, both regulatory and legislative policies need to be crafted in a manner that recognizes the unique characteristics of the region from its vastness, to its unequaled resource endowment and natural beauty.
Abstract

Animal disease preparedness involves an array of activities to enhance the ability to prevent or mitigate the effects of high consequence diseases. Outbreaks of highly pathogenic avian influenza and virulent Newcastle disease in the last decade tested animal disease preparedness investments in the West and highlighted areas where planning and research are still needed. This paper reflects on those eradication efforts and lessons learned from 2009-2019, as well as future challenges and opportunities pertaining to animal health in Western states, specifically resource limitations, public perceptions, and business continuity plans.

Introduction

Reflecting on the last decade, livestock industries and animal health response agencies have faced an increase in global disease threats and have responded to multiple disease challenges. Animal health policy has advanced in the wake of lessons learned domestically and abroad to prepare the US for future, and possibly greater, challenges in the form of transboundary animal diseases (TAD) —also referred to as foreign animal diseases (FAD). TADs are diseases currently circulating elsewhere in the world and have the potential to severely impact the health and productivity of US livestock populations, the livelihoods of farmers and ranchers, and the export market share of US meat and livestock products. Among others, TADs include diseases such as foot-and-mouth disease (FMD), classical swine fever (CSF), African swine fever (ASF), virulent Newcastle disease (VND), and highly pathogenic avian influenza (HPAI). The 2018-2019 ASF outbreak in China, as an example, has made headlines and rocked global pork markets in 2018 and 2019 due to the high death loss and the difficulty of killing the virus in the environment, even after the removal of infected hogs. To limit such losses, the US must be prepared to respond rapidly in the event of a domestic introduction of TAD.

Being prepared requires an investment of time and resources and is essential for preventing and reducing the effects of TAD outbreaks. The term “preparedness” encompasses an array of activities including reviewing standard response processes (e.g. sampling and lab processing); stockpiling critical materials and equipment; supporting new research and development; prevention/mitigation and response planning; and practicing response through tabletop or functional exercises. Some preparedness investments are broadly applicable across TADs. For example, commercial swine depopulation technologies developed in preparation for FMD would also be deployable in the event of ASF or CSF. Other preparedness investments are more specific, such as stockpiling vaccines in the North American Vaccine Bank for threats such as FMD and HPAI.

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This ongoing need for investment in animal health preparedness was recognized when mandatory spending in the 2018 Agricultural Improvement Act was set aside specifically for enhanced animal disease preparedness and response capacity, including enhancement of the National Animal Health Laboratory Network, and the development of a US animal disease vaccine bank. This funding has created an opportunity to enhance the resilience of US livestock industries to TADs, which has never been more critical given the threat of TAD introduction and the historic size of US livestock inventories. This paper reflects on eradication efforts and lessons learned from 2009-2019, with specific emphasis on Western states, as well as future challenges and opportunities pertaining to animal health. The goal is to provide perspective on the importance of animal disease preparedness and why investments in preparedness are a necessity rather than an option.

Background: Animal Disease Challenges in Western States 2009-2019

Between 2005 and 2012, 8,345 HPAI outbreaks occurred globally in 65 countries. Those outbreaks were largely spread through live bird markets after introductions of the disease in small-scale poultry operations from wild bird contact. While relatively rare worldwide, over 700 human infections from HPAI H5N1 occurred from 2003-2018—none of those cases occurred in the US (CDC, 2019). In response to outbreaks worldwide, the US government invested in enhanced stockpiles of response equipment and supplies, trained responders, and created response plans. Poultry growers adopted enhanced biosecurity to prevent the introduction of HPAI and worked closely with animal health response agencies to develop business continuity plans to maintain movements of low-risk products. If the US was ready to respond to any TAD, it was HPAI.

From 2013-2018, a new wave of HPAI in international domestic poultry occurred resulting in 7,011 outbreaks in 68 countries—including the US (OIE, 2018). The US experienced HPAI in 232 flocks (211 commercial flocks and 21 backyard flocks) in 2014 and 2015, a turkey flock in 2016, and 2 Tennessee chicken flocks in 2017. The 2014-2015 HPAI outbreaks challenged animal disease preparedness/mitigation due to the large number of outbreaks occurring over a 7-month period, large number of states with infected flocks (15), and the diverse types of flocks affected. Western states with domestic poultry infections included California (2 flocks), Idaho (1 flock), Montana (1 flock), Oregon (2 flocks), and Washington (5 flocks). The outbreak resulted in the depopulation of almost 50 million birds and cost between $879 million and $1 billion in total economic cost to producers (Johansson et al., 2016). Despite being the largest and most expensive TAD outbreak in US history, the disease was successfully eradicated with no re-introductions on restocked farms. Such success was a testament to the importance of preparedness and the hard work of industry and animal health authorities. Johansson et al. (2016) estimated that, without the timely federal response, the damages to poultry industries could have doubled or tripled, meaning the benefits of timely response outweighed the cost of that response. However, many lessons were learned during those HPAI outbreaks as previously developed response plans were tested in very difficult conditions. It was evident that preparedness and mitigation must be constant and progress as industries evolve in complexity. A 2016 report outlined priority preparedness activities prior to the next big outbreak.3

Unfortunately, the threat to Western poultry populations was not over. In 2018-2019, California was challenged again with a second poultry health event—virulent Newcastle disease (VND). The VND outbreak was very different from HPAI in terms of geographic spread and the types of farms most impacted. VND resulted in 4554 infected flocks concentrated in only 3 contiguous counties, with limited detections in 3 other California counties, 1 flock in Utah and 1 flock in Arizona. VND was also different from HPAI in the method of disease introduction and spread. HPAI in 2014-2015 along the Western US was most likely caused by wild bird introductions moving along the Pacific migratory flyway. The 2018-2019 VND outbreaks were characterized by lateral spread among backyard flocks, at least some of which comingled at live bird markets and exhibition events. Of the 1.7 million domestic poultry and fowl depopulations/deaths associated with HPAI, LPAI and VND from 2009 to 2019 in Western States, 69% of poultry depopulations/deaths were associated with the 2018-2019 VND outbreak. The VND outbreak was also much longer, lasting over a year, but the trade consequences were limited due to many of the infected flocks being non-commercial. Although the largest TAD challenges to Western states in the last decade have been associated with poultry disease, preparedness activities have and must encompass other threats as well.

The Potential Value of Preparedness in Foot and Mouth Disease Response

Preparedness is a continuous process. To see this in action, consider preparedness for FMD. The introduction of FMD to the United States can be considered one of the most dangerous TAD threats (Breeze, 2004). Since 1929, the US has not experienced an FMD outbreak and is currently considered FMD free without vaccination (Ward et al., 2009). All cloven-hoofed animals are susceptible to infection. In Western states, the susceptible animal population includes the high value dairy industry and cattle feeding industry. In addition, a large part of the nation’s small ruminant herd is in Western states and FMD can occur, with limited clinical signs, in sheep.

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and goat populations. This creates a potential for “silent” disease spread among the small ruminant population in the same region that contains large numbers of susceptible cattle and, to a lesser extent, swine populations.

If an FMD outbreak were to occur, immediate depopulation of infected livestock, quarantines and movement restrictions (“stamping-out”) are an effective response to eradicate the disease in a timely manner (McReynolds and Sanderson, 2014). Depending on the extent of disease spread before the disease is first detected, stamping-out may result in large production losses. Simulations of an FMD outbreak occurring in a 40,000+ feedlot located in Kansas showed greater than 1.2 million out of the 2 million cloven-hoofed animals in the surrounding area would be culled (Pendell et al., 2007). Removal of such significant numbers of animals not only depletes available supplies from an industry, but previous studies have identified depopulation incurs significant costs as the method is laborious and requires significant logistical planning (DeOtte and DeOtte, 2010; McReynolds and Sanderson, 2014). Rapid detection has the potential to reduce the overall duration of outbreaks, head removed, and overall economic impact. Carpenter et al. (2011) found that a single day of delay in detection in the first case of disease, from 21 days to 22 days post infection, could result in 2,000 more cattle depopulated and $565 million in losses for every hour of delay.

From an economic perspective, the largest potential financial losses associated with FMD outbreaks are typically caused by the loss of international trade (Ekboir, 1999; Paarlberg et al., 2002). For a net exporting country, the loss of exports could result in greater losses than production losses from the disease itself (Junker et al., 2008). Ekboir (1999) found an FMD outbreak beginning in California could lead to losses between $8.5 million and $13.5 billion with a substantial share of those losses being credited to US meat export restrictions. Industries may be unable to adjust supply levels quickly to offset the reduced international demand, and consequently, domestic prices may decline for products like pork and beef in net exporting countries. Longer outbreaks result in longer trade embargoes and mitigation strategies that reduce the duration of outbreak typically have the greatest impact on reducing the overall economic burden of disease (Paarlberg et al. 2008). Hagerman et al. (2012) examined the effectiveness of an animal traceability system in FMD surveillance during a simulated outbreak in the Texas panhandle. The study found that a reduction in the delay to tracing from 10 days to 2 days reduced the cost of the outbreak by $180 million and reduced the number of cattle placed under movement restrictions by 15,000 head.

In addition to the cost of disease response, value of depopulated animals, and trade losses, secondary losses in service industries and declines in consumer confidence are also viable concerns during an FMD outbreak. A significant portion of demand for feed grains in the US is linked to the livestock industry’s need to feed their animals. When herd numbers decrease, demand for feed grains also declines, resulting in lower feed grain prices (Hagerman et al., 2009). The goal of an FMD response is to stop the spread of the virus. However, the strategy implemented could depend on the economic consequences of the strategy.

**Vaccination for Disease Mitigation: An Opportunity and a Challenge**

Some TADs have viable, commercially available vaccines to aid in eradication (e.g. FMD, CSF and HPAI), whereas others do not (e.g. ASF). Livestock producers might wonder, if a viable vaccine for a TAD is available, why the vaccine is not used in the US to prevent disease introduction. For some diseases, the answer is partially biologic. Like the annual influenza shot for humans, an FMD vaccine has to match the circulating strain to offer much protection. With 60+ serotypes of the FMD virus circulating in the world, it is difficult to match the circulating strain. Consider HPAI vaccines, which could be administered to a day-old chick but would require approximately 21 days to be fully effective, and then withdrawal periods must be observed before harvest. This is unlikely to be feasible for certain sectors of commercial poultry production, like the high value broiler industry. A larger part of the answer is related to global meat and animal production trade market access. Any country that uses systematic vaccination would potentially face additional sanitary restrictions on their products, even when a disease outbreak is not ongoing.

So, if vaccination is only used after a TAD outbreak has begun—where the vaccine can be matched to the exact virus strain and production types allow appropriate withdrawal times—the timing and implementation of the vaccine strategy becomes critical. Herein lies the motivation for a US vaccine bank, in addition to the existing North American Vaccine Bank shared with Canada and Mexico. An effective emergency vaccine campaign, in conjunction with stamping-out, would require rapid vaccine availability, rapid vaccine administration, and tracking of all vaccinated animals. The vaccine bank, which stocks the “starter stockpile” of vaccine, would provide the first wave of inoculations, followed by steady supplies after the manufacturer increases production to meet the need of the outbreak.

The US vaccine bank is tasked with prioritizing FMD vaccine stockpiles first. New vaccines have been developed for FMD that allow testing to differentiate infected from recovered animals (called DIVA vaccines). These vaccines open up a new list of possibilities for the management of vaccinated animals after an outbreak has ended. Prior to DIVA vaccines, vaccinate-to-kill strategies

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5 Based on USDA-APHIS HPAI vaccination guidelines available online at: https://www.aphis.usda.gov/publications/animal_health/2015/fs-hpai-vaccine-use.pdf

6 A strategy in which vaccinated animals serve as a limiter to disease spread, but are depopulated afterward rather than live out their productive life or enter the food supply.
were often utilized under the justification that early removal of vaccinated animals may speed the removal of trade embargoes. When vaccinate-to-live strategies are implemented, the burden of proving disease freedom may be more costly due to additional surveillance. Geale et al. (2013) called for a review of World Animal Health Organization (OIE) guidelines on recommended timelines to lift trade embargoes when a country’s FMD response includes a DIVA vaccine. In the Western US, a new DIVA vaccination strategy could protect high value dairy or breeding stock, without requiring subsequent depopulation of vaccinates.

Preparedness challenges and opportunities for the next decade

The next decade will see changes among consumers and animal industries. In addition to existing animal health threats, emerging threats require flexibility in response planning. Three issues in preparedness will be discussed in more detail: resource limitations, public perceptions, and business continuity.

Limitations in Resources and Increasing Industry Complexity

The poultry and swine industries have changed in structure over the last 20 years. Today, most inventories are concentrated in intensively managed indoor facilities that contract with a small number of processing companies. In the beef sector feedlots have, for some time, been concentrated in a limited number of states. This concentration of livestock in the different meat sectors stresses resources in the event of an outbreak. In Iowa, multiple egg-laying hen facilities with more than a million birds became infected with HPAI during the 2015-2016 HPAI outbreak, which posed challenges for depopulation, disposal and cleaning and disinfection. Johnson et al. (2016) describes some of the resource limitations in the HPAI outbreak, such as water for foam depopulation on turkey farms and large equipment rental availability for cleaning and disinfection. In another example, DeOtte and DeOtte (2010) examine the resources needed to respond to FMD in a 70,000 head feedlot. They estimated it would take 4.5 days to depopulate the feedlot and another 11 days to dispose of carcasses. Carcass burial for the depopulated cattle was estimated to require 90 acres of land and cost $1.8 million (DeOtte and DeOtte, 2010).

At the other end of the spectrum are responses focused on smallholder populations, like the backyard poultry flocks involved in the 2018-2019 VND outbreak in California. Almost 90% of livestock farms in the US are considered “small”. From surveillance and movement restrictions, to cleaning and disinfection, preparing for an outbreak on a small farm is very different to preparing for an outbreak on a large, commercial farm. Resource limitations will continue to be an issue for animal health response in US animal industries. Future research will need to consider the current and future trends in herd/flock housing, management and size under limited resources. Research areas may include questions around strategic stockpiling, targeted response strategies, and the returns on investments in research and development.

Managing Public Perceptions at Home and Abroad

Public perception of disease occurrence and response strategy selection must also be considered, particularly in the rapidly changing digital world. Preparedness involves more than just preparing responders or livestock industries. It is also preparing to respond when the public demands answers and reassurances about the safety of US food supplies. Today, this is complicated by consumers’ desire for information on management and humane handling of livestock. Domestic avoidance of meat after an FMD outbreak could lead to severe economic losses for the US if consumer confidence in the livestock and meat industry declined and substitutions for meat were found (Paarlberg et al. 2008). In the 2001 UK FMD outbreak, media images of pyres of burning carcasses caused a negative reaction by UK consumers (Thompson et al., 2003). Taiwan experienced the loss of 65,000 jobs in service industries during a 1997 FMD outbreak (Yang et al., 1999) while the 2001 United Kingdom FMD outbreak left a loss of $4.2 to $4.9 billion in tourism revenue (Thompson et al., 2002). Given the large population centers and the value of tourism from outdoor activities in Western states, advanced planning to manage the public’s risk perceptions in a disease outbreak may be a necessary part of disease preparedness. Future research could explore consumer perceptions of diseases, response strategies, and what is needed to regain consumer confidence after disease eradication.

Globally, great strides have been made to use risk-based disease information when setting the magnitude and length of trade embargoes for sanitary reasons. “Regionalization” refers to the recognition of certain parts of a country as disease free and consequently exempt from sanitary trade embargoes. In practice, regionalization has limited undue damages from animal diseases. In the 2014-2015 US HPAI outbreak, bilateral trade restrictions were placed at the national and regional level (Seitzinger and Paarlberg, 2016). The broiler industry in the Southeastern states particularly benefited from regionalized trade embargoes. Economists can offer industry, policy makers, and animal health agency officials input on the most impactful preparedness activities to limit negative public perceptions by domestic consumers as well as trade partners.

7 A strategy in which animals vaccinated with a DIVA vaccine, that are non-infected as evidenced by the accompanying diagnostics, live out their productive life and can enter the food supply chain.
Business Continuity

In addition to preparing for response on infected farms, preparedness also encompasses planning for the continued movement of low-risk products from non-infected premises that are within movement control areas. Proactive risk assessments have resulted in Secure Food Supply (SFS) plans to assist in business continuity in the event of an outbreak. SFS plans were implemented during poultry disease outbreaks in the last decade, and plans for pork and beef production are in development. One example of how research and planning have merged is the Secure Milk Supply and the development of bulk milk tank testing for FMD. California is a leading milk producer in the US and the state has a large import-export business from ocean ports, increasing the risk of accidental introduction of FMD to the US. Bulk milk tank testing has the potential to swiftly detect FMD, while limiting high-risk contacts of cattle during an active disease response. Future research could include measuring the impact of business continuity plans on farm-level or regional resilience.

A Way Forward: There Is No Silver Bullet

The realities of animal disease preparedness, response, and recovery are ever changing. Nothing stays the same—viruses mutate, industries grow and evolve, policies change. The risk of disease exposure and infection are increasing every day. This risk comes from increasing global travel, movements of live animals and meat products, the survivability of some viruses in the environment, wildlife interactions (particularly the continued expansion of feral hog populations), and the continued growth of small scale or backyard livestock production. People are also more connected than ever, and information from both official and unofficial sources is just a tap on the smart phone away.

Within a few years, California experienced two poultry disease outbreaks—HPAI in 2014-2015 and VND in 2018-2019. The outbreaks were vastly different, and as a result, the eradication response had to be different to be effective. Western states face unique challenges in their livestock sectors, environmental and legal restrictions, and geographic landscapes. Furthermore, as animal health authorities prepare for the disease threats already known in the world, the possibility of emerging diseases cannot be ignored. ASF was a threat with a much lower probability of occurring on US soil not long ago. Now, the US plays a waiting game with ASF. In the last decade, the US has experienced a great deal of forward progress in preparedness. Scientific advancements may bring new tools to bear in animal disease response. After all, there is no way to predict what the next challenge will be. Only through flexibility, collaboration, and refusing to become compliant can the US best position itself to overcome the next big outbreak. This overview of lessons learned from the last decade and challenges for the future is in no way exhaustive, but rather is meant to serve as a starting point for the next wave of discussions on preparedness activities.

References


The Western United States accounts for just over half of the cropland acres and almost 90 percent of the pastureland acres in the United States. In terms of livestock, almost half of the dairy cows, 60 percent of beef cows, and more than 75 percent of cattle on feed in the United States are located in the West. In terms of the value of agricultural production, California and Texas alone produce almost 20 percent of the value of agricultural production in the United States. It stands to reason that the farm bill would be important to producers in the West.

The Agriculture Improvement Act of 2018 (2018 Farm Bill) was signed by President Trump on December 20, 2018. It passed the U.S. Senate on December 11, 2018, and the U.S. House of Representatives the following day with overwhelming majorities in both chambers. The farm bill covers a variety of public policy areas—from farm and conservation policy to nutrition and agricultural research funding. At passage, the 2018 Farm Bill was projected to cost $867 billion over 10 years—almost $90 billion less than the 2014 Farm Bill was estimated to cost at passage (Congressional Budget Office, 2014; Congressional Budget Office, 2018). As noted in Figure 1, of the estimated $867 billion in total mandatory outlays, 76.5 percent is for the Supplemental Nutrition Assistance Program (SNAP). The farm safety net accounts for just over 16 percent and the suite of conservation policies account for approximately 7 percent, leaving just 0.5 percent for everything else in the farm bill.

While most of the provisions in the farm bill are intentionally designed to work for all regions of the country, the focus of this article is on provisions that are particularly important to the Western United States. While the farm bill authorizes hundreds of discretionary programs—all subject to the annual appropriations process—this paper focuses on the non-nutrition programs with mandatory baseline funding.

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3 For purposes of this paper, references to the Western United States include all 19 states acknowledged in the WAEA operating policies: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, and Wyoming. Further, most of the material in this article is drawn from the Agriculture Improvement Act of 2018 (2018 Farm Bill) and the Agricultural Act of 2014 (2014 Farm Bill).
Farm Safety Net

The farm safety net is comprised of commodity policy and federal crop insurance. The general structure of commodity policy from the 2014 Farm Bill—including the Agriculture Risk Coverage (ARC) and Price Loss Coverage (PLC) programs—was largely maintained. Therefore, the 2018 Farm Bill made several key improvements. Unlike the 2014 Farm Bill, which required producers to make a joint decision for all 5 years of the farm bill, the 2018 Farm Bill requires a joint decision for the 2019 and 2020 crop years only. Beginning in crop year 2021, the election between ARC and PLC will become an annual decision. The 2018 Farm Bill also increased several of the marketing loan rates, including for Extra Long Staple cotton, as discussed in more detail below.

Specific to PLC, the farm bill maintained existing reference prices but made allowances for reference prices to increase up to 15 percent, if certain market conditions are met—a feature known as the Effective Reference Price.4 With respect to ARC, the farm bill:

- mandates the use of RMA data as the primary data source;
- requires that ARC payments for a farm be based on the physical location of the farm rather than the administrative county;
- increases the yield plug from 70 percent to 80 percent of the transitional yield;
- requires the Secretary to calculate and use a trend-adjusted yield factor to adjust the yields (not to exceed the factor used by RMA);
- requires the Secretary to calculate separate actual crop revenue and ARC guarantees for irrigated and non-irrigated crops; and
- allows Effective Reference Prices to replace low prices in ARC calculations.

While traditional commodity policy remains a key part of the farm safety net, federal crop insurance is now the cornerstone, accounting for 56 percent of the farm safety net budget. Crop insurance was largely maintained in the 2018 Farm Bill with only slight modifications, one of which was the creation of the new Dual-Use Option that is available only to certain Western producers. Several improvements to the farm safety net that are most relevant to the Western United States—including the new Dual-Use Option—are highlighted below.

Extra Long Staple (ELS) Cotton While ELS is not a covered commodity (i.e. it is not eligible for ARC and PLC), it is eligible for marketing loans. Under the 2014 Farm Bill, the loan rate for ELS was $0.7977/lb. Under the 2018 Farm Bill, the loan rate was increased by 19 percent to $0.95/lb. Further, payments under the special competitive provisions for ELS cotton, designed to help domestic mills and exporters to be competitive in the world market, are to be made whenever two triggers are met. One of these triggers is when competing ELS cotton (adjusted to United States quality and location and for other factors affecting the competitiveness of such cotton) is less than 134 percent of the loan rate for ELS cotton. Under the 2018 Farm Bill, this threshold is reduced from 134 percent to 113 percent.

4 The Effective Reference Price is the higher of (1) the Statutory Reference Price or (2) 85 percent of the 5-year Olympic average of the marketing year average price of the commodity for the preceding 5 crop years, not to exceed 115 percent of the Statutory Reference Price.

Figure 1: 2018 Farm Bill Estimated Mandatory Outlays (Fiscal Years 2019-2028).
Dairy production in the Western United States is increasingly concentrated in fewer, larger operations. Over the past 15 years, while the number of dairy operations has roughly been cut in half, the number of cows per dairy has more than doubled, now averaging more than 1,000 cows per dairy. In California, according to the latest Census of Agriculture, 83 percent of the cows are on dairies with 1,000 or more cows. While the 2018 Farm Bill included a host of improvements to the Margin Protection Program (MPP)—renamed Dairy Margin Coverage (DMC) in the 2018 Farm Bill—one of the biggest improvements for larger dairy producers was a decrease in premiums in tier 2 (production over 5,000,000 pounds). For the $5/cwt coverage level, premiums were reduced from $0.04/cwt to $0.005/cwt, a reduction of 87.5 percent. Producers interested in locking in their coverage levels for 5 years receive an additional 25 percent reduction in premiums paid. For a larger producer at the $5/cwt coverage level that avails themselves of the discount, premiums would drop from $0.04/cwt to $0.00375/cwt, a reduction of over 90 percent.

Payment Acres One common complaint about commodity policy is that payment (or base) acres are not reflective of the crops grown on a farm. In many cases, those acres have been in permanent pasture for years. The 2018 Farm Bill attempted to address this issue, rendering any farm on which all of the cropland was planted to grass or pasture (including cropland that was idle or fallow) from January 1, 2009, to December 31, 2017, ineligible for ARC or PLC. While USDA has not published estimates of the number and location of acres impacted, we suspect that many—if not most—of those impacted acres are in the Western United States. For producers with wheat base—with an expected $14 per acre in ARC and PLC payments over the next 5 years—this may actually prove to be welcome news. Any farm impacted by this provision will be eligible for $18 per acre per year in the new Conservation Stewardship Program (CSP) Grasslands Conservation Initiative.

Temperate Japonica Rice The 2014 Farm Bill first established a separate reference price for Temperate Japonica rice (grown predominantly in California) at 115 percent of the reference price for long-grain rice. The 2018 Farm Bill maintained the separate reference price for Temperate Japonica rice but changed the 115 percent factor to a ratio of (1) the simple average of the marketing year average price of medium-grain rice from the 2012 through 2016 crop years to (2) the simple average of the marketing year average price of all rice from the 2012 through 2016 crop years. This effectively establishes the factor at 124 percent (an increase of 9 percentage points over the factor in the 2014 Farm Bill). Notably, the Effective Reference Price feature applies to the long-grain rice reference price (with the 124 percent factor then being applied to arrive at the Effective Reference Price for Temperate Japonica).

Crop Insurance Dual-Use Option As noted above, crop insurance was largely unchanged in the farm bill. One notable exception was the creation of what USDA is calling the Annual Forage Insurance Program’s Dual-Use Option. A central tenet of crop insurance is that a producer is ineligible for more than one crop insurance policy on a particular crop. However, what about crops that are capable of different uses in different growing seasons? The 2018 Farm Bill authorized separate crop insurance policies for annual forage crops that can be grazed in the fall and mechanically harvested in the spring. Under this option, a producer is able to insure grazing under an Annual Forage policy and grain under a separate multi-peril crop insurance policy. The producer must pay premium for the additional coverage but is eligible to keep indemnities from both policies. The option is currently available only in certain counties in Colorado, Kansas, Nebraska, New Mexico, Oklahoma, and Texas (U.S. Department of Agriculture, Risk Management Agency, 2019).

Conservation and Forestry Policy

Perhaps, no issue in the farm bill is more important to the Western United States than conservation policy. In a release following passage of the 2018 Farm Bill in the U.S. House of Representatives, the Congressional Western Caucus (2019) noted that the conservation title “could be the strongest conservation title of any Farm Bill for Western Members.”

Conservation Reserve Program (CRP) Initially authorized at a maximum of 45 million acres in the 1985 Farm Bill, CRP acreage reached its peak of 36.8 million acres in fiscal year 2007. Against the backdrop of high commodity prices, the 2014 Farm Bill reduced allowable CRP acres to 24 million in fiscal year 2017 (with a maximum of 2 million acres in grassland). The 2018 Farm Bill increased the acreage cap to 27 million acres by 2023 and converted the grassland cap to a 2 million acre minimum. The 2018 Farm Bill also reduced rental rates and incentive payments in an effort to make cropland more affordable for beginning farmers and ranchers while also providing more flexibility for grazing. At the end of fiscal year 2018, 65 percent of the acres under contract in CRP were in Western states.

Environmental Quality Incentives Program (EQIP) The EQIP is particularly important to the Western United States. In fact, on average over the past 5 years, the 19 Western states accounted for almost half of the EQIP funding and over 75 percent of the acres treated in the United States. Under the 2018 Farm Bill, authorized spending for EQIP increased from $1.75 billion in fiscal year 2019 to $2.025 billion in fiscal year 2023. The fiscal year 2023 authorization is roughly twice the levels that EQIP spent as recently as fiscal year 2012. This was accomplished, in part, by reforming the Conservation Stewardship Program (CSP), capping the funding available at $1 billion per year while establishing incentive contracts and alternative funding arrangements for irrigation districts as part of EQIP.
Regional Conservation Partnership Program (RCPP)  
RCPP was created in the 2014 Farm Bill to leverage partnerships to achieve purposes similar to those under several existing programs. These programs included the agricultural water enhancement program, the Chesapeake Bay watershed program, the conservation partnership initiative, and the Great Lakes basin program for soil erosion and sediment control, on a regional or watershed scale. California rice producers were involved in one of the first RCPP contracts—entitled *Sustaining the Future of Rice*—in a partnership between USA Rice and Ducks Unlimited. While the 2018 Farm Bill focused on making RCPP more efficient and flexible, it also increased the funding for RCPP from $100 million per year to $300 million per year over the life of the bill.

Agricultural Conservation Easement Program (ACEP)  
The 2014 Farm Bill created the ACEP by consolidating three former easement programs: the Farm and Ranch Lands Protection Program (FRPP), the Grassland Reserve Program (GRP), and the Wetlands Reserve Program (WRP). Under the 2014 Farm Bill, ACEP funding ramped up to $500 million in fiscal year 2017 before dropping to $250 million in fiscal year 2018, leaving ACEP only $250 million per year in baseline funding under which to write the 2018 Farm Bill. Despite that limitation, the 2018 Farm Bill increases funding for ACEP to $450 million for each of the 2019 through 2023 fiscal years.

Watershed Protection and Flood Prevention  
Watershed protection and flood prevention activities have long been funded with discretionary appropriations. The 2014 Farm Bill provided $250 million in mandatory, one-time funding for fiscal year 2014. The 2018 Farm Bill drastically increased funding, providing $500 million over 10 years (or $50 million per year in baseline funding) for conservation infrastructure activities, including rehabilitation for small watershed structures like dams.

Feral Swine Eradication and Control Pilot  
To address the growing problems caused by feral swine—including increased risks for the spread of catastrophic diseases like African Swine Fever (ASF)—the 2018 Farm Bill provided $75 million for the establishment of the Feral Swine Eradication and Control Pilot. While funded by the conservation title in the farm bill, the pilot is a joint effort between USDA's Natural Resources Conservation Service (NRCS) and Animal and Plant Health Inspection Service (APHIS). On June 20, 2019, USDA announced $16.7 million in funding for 20 projects in 10 states, only two of which are in Western states (Texas and Oklahoma) (U.S. Department of Agriculture, 2019). USDA expects to expand into other areas over the life of the farm bill.

Categorical Exclusions for Forestry Operations  
While there is very little mandatory funding in the farm bill baseline for forestry, there were several meaningful improvements included in the 2018 Farm Bill, primarily through the renewal and expansion of categorical exclusions (CEs). CEs are “a category of actions which do not individually or cumulatively have a significant effect on the human environment…for which, therefore, neither an environmental assessment nor an environmental impact statement is required” (Categorical Exclusion, 2010). The 2018 Farm Bill renewed and expanded the insect and disease CE, which allows the harvest and salvage of insect- and disease-infected timber (without the need for environmental assessments or environmental impact statements). The 2018 Farm Bill also authorized a CE for activities that protect, restore, or improve habitat for greater sage-grouse or mule deer. While the 2018 Farm Bill included several meaningful improvements for managing our forests to reduce hazardous fuel loads, there were several proposed CEs that ultimately were not included in the conference agreement.

Agricultural Trade Promotion and Facilitation  
The United States has long provided mandatory farm bill funding for trade promotion and facilitation. Most recently, the 2014 Farm Bill reauthorized the following programs:

- **Market Access Program (MAP):** $200 million for overseas marketing and promotion of both branded and generic U.S. agricultural products. In fiscal year 2019, just under half of the 65 participants were region-specific groups with 75 percent of those focused on the Western United States.

- **Foreign Market Development Cooperator Program (FMD):** $34.5 million per year for promotion of generic agricultural commodities and reducing foreign import barriers.

- **Technical Assistance for Specialty Crops (TASC):** $9 million per year to address export barriers for U.S. specialty crop exports.

- **E Kika De La Garza Emerging Markets Program (EMP):** up to $10 million per year to facilitate development of developing, market-oriented economies.

This $253.5 million per year in mandatory funding was routinely included in the Congressional Budget Office’s (CBO) mandatory baseline updates, meaning that the framers of successive farm bills did not need to come up with “new” funding to pay for their reau-
To address this shortfall, Congress consolidated all of the existing authorities under the Agricultural Trade Promotion and Facilitation umbrella—satisfying the $50 million rule—again establishing baseline for these programs, this time at $255 million. While funding is consolidated under a single umbrella, each program maintains its unique mission with dedicated funding levels largely consistent with spending levels in the 2014 Farm Bill. The only exception is EMP, which is capped and $8 million per year, and the Secretary is given authority to allocate an additional $3.5 million per year amongst the four programs out of a newly created Priority Trade Fund.

The Pima Cotton Trust Fund and the Wool Apparel Manufacturers Trust Fund, both of which compensate domestic manufacturers for inequities in their respective tariff schedules, were reauthorized in the miscellaneous title of the 2018 Farm Bill at an estimated cost of $200 million over the life of the farm bill.

Other Policies

**Specialty Crops and Local Agriculture**

While the policies above account for 99.98 percent of mandatory funding in the farm bill, a handful of mandatory research and market promotion provisions are important to the specialty crop industry in the Western United States. The 2018 Farm Bill maintained mandatory funding for the Specialty Crop Research Initiative (SCRI) at $80 million per year. The 2018 Farm Bill eliminated the $25 million per year reservation for citrus disease research in SCRI and funded citrus disease research separately. Funding for the Organic Agriculture Research and Extension Initiative (OREI) was increased from $20 million in each of fiscal years 2019 and 2020 to $50 million in fiscal year 2023 and each year thereafter (establishing baseline funding for OREI). The 2018 Farm Bill reauthorized the Specialty Crop Block Grants Program, which provides $85 million per year for state departments of agriculture to make promotion and marketing grants. Finally, the 2018 Farm Bill combined the Farmers Markets and Local Food Promotion Program and the Value-Added Producer Grant Program into the Local Agriculture Market Program (LAMP), with $500 million in baseline funding over 10 years.

**Livestock**

As noted by Hagerman and Marshall in this issue, the United States faces a growing number of disease threats. The 2018 Farm Bill provided $300 million over 10 years for animal disease prevention and management, including:

- reauthorizing the National Animal Health Laboratory Network;
- establishing an American vaccine bank to respond to the introduction of animal diseases like foot-and-mouth disease (FMD); and
- Establishing the National Animal Disease Preparedness and Response Program (NADPRP) to leverage local, state, and national resources to prevent and respond to animal disease threats.

Of the $300 million provided in the 2018 Farm Bill, a total of $120 million is available for fiscal years 2019 to 2022 (with $5 million per year set aside for NADPRP). Beginning with fiscal year 2023, $30 million per year is available (with $18 million per year set aside for NADPRP).

The 2018 Farm Bill also included several other provisions with mandatory funding that benefits the livestock industry. Most notably, the farm bill reauthorized and made marginal improvements to the suite of livestock disaster programs, including the Livestock Indemnity Program (LIP) and the Livestock Forage Program (LFP). The farm bill also reauthorized the Sheep Production and Marketing Grant Program with one-time funding of $2 million in fiscal year 2019 and the Wool Research and Promotion Program at $2.25 million per year.

**Other**

The 2018 Farm Bill combined the Beginning Farmer and Rancher Development Program (BFRDP) and the Outreach and Assistance for Socially Disadvantaged Farmers Program under the Farming Opportunities Training and Outreach (FOTO) program, with $435 million in baseline funding over 10 years.

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5 Under Section 257 of the Balanced Budget and Emergency Deficit Control Act of 1985, CBO typically assumes that certain programs with an estimated $50 million in outlays in the final year of authorization will continue beyond their statutory expiration—establishing “baseline” for that program. Prior to June 2017, it appears CBO did not apply that rule to FMD and TASC.
Conclusion

At a House Agriculture Committee Subcommittee on Conservation and Forestry hearing to review USDA farm bill conservation programs, Ranking Member Doug LaMalfa from California said “[t]he funding and reforms made to these programs…make this the strongest farm bill ever for Western states…” (U.S. Congress, House of Representatives, Subcommittee on Conservation and Forestry, 2019). While the farm bill contains a number of provisions that are beneficial to the Western United States, USDA is still in the midst of implementation, and only time will tell if each program is achieving its intended outcome.

References


Congressional Budget Office. 2017. CBO’s June 2017 Baseline for Farm Programs. Congress of the United States, Congressional Budget Office, 29 June.


By Luis A. Ribera1 and Mechel Paggi2

Introduction
The economic well-being of US agriculture is tied to a successful export sector, which has built a reputation of providing a reliable supply of competitively priced products (Persaud, 2019). Over the past few years, US agricultural exports have been hampered by a tumultuous series of trade policy actions that distorted traditional trade flows and created uncertainty in regards to the future of trade relations with some of our most important markets. For example, the withdrawal from the 12-country Trans Pacific Partnership (TPP) Agreement that included Japan, one of the US’ top 5 agricultural markets. Another instance is the renegotiation of the terms of NAFTA, with Mexico and Canada, two more of the top 5 markets. Lastly, the evolving US tariff induced conflict with China, previously our number one agricultural export market. Hopefully, recent events, such as the passage of the U.S.-Mexico-Canada Agreement (USMCA), a trade agreement with Japan, and signing of the Phase 1 agreement with China, will resolve these issues, help restore confidence and lead to more stability in markets.

In this paper, we provide an overview of the effects of recent trade conflicts on US agricultural exports. We then focus on those impacts on Western State commodities. While a great deal has been written concerning the impact on major row crops such as soybeans and corn, many Western State commodities, such as tree nuts, fruits and vegetables, have also experienced significant market disruptions (Sumner et al., 2019). Further, we review the importance of government programs designed to mitigate the damage to U.S. producers from the recent trade conflicts. A brief summary and conclusion follow.

Observations Regarding US Agricultural Export Patterns
The US is the largest agricultural exporter in the world, exporting $139.6 billion in 2018. Anytime a trade disruption occurs, US farmers are affected, often negatively. The main US agricultural products exported in terms of volume and value are grains & feeds, oilseeds & products, horticultural products and livestock & meats (Table 1 and 2).

The value of US agricultural exports has increased over the last three years and two of the last three years in quantity (Tables 1 and 2). The largest decrease in quantities of the main US agricultural exports from 2016 to 2018 are oilseeds & products and horticultural products with 12.5 and 6.1 percent reduction, respectively. On the other hand, all other agricultural products increased between 5.7 percent for poultry & products, and 17.8 percent for other. In terms of value, the largest decreases have been in oilseeds &

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2 Agricultural Policy Analyst, National Crop Insurance Services. He is the retired Director/Associate Dean of Research, Jordan College of Agricultural Sciences and Technology, California State University-Fresno.
products with 15.1 percent while all other commodities increased between 2.1 percent for horticultural products, and cotton, linters & waste for 65.3 percent. Even though there has been some variability over the last three years, there have not been any major changes in US agricultural exports except for oilseeds & products, mainly due to the trade conflict with China.

Major changes in US agricultural exports have transpired over the course of the first 11 months of 2019 (Table 1 and 2). Therefore, when comparing January to November of 2019 with the same period in 2018, US agricultural exports decreased by 10 percent in quantity and 3 percent in value. The largest decrease in quantities of the main US agricultural exports are grains & feeds by 21 percent, other by 8 percent and poultry & poultry products by 2 percent. On the other hand, oilseeds & products and livestock & meats increased by 6 percent each and horticultural products by 3 percent. In terms of value, the largest decreases have been in grains & feeds by 13 percent, cotton, linters & waste by 7 percent, and livestock & meats and other with 1 percent each. Oilseeds & products had no change while horticultural products increased by 3 percent. Again, most of these variations mainly were due to the trade conflict with China.

Exports to major markets account for 50 and 54 percent in terms of quantity and value, respectively, and in 2018 major changes occurred (Table 3 and 4). Overall, US agricultural exports to these markets increased by 0.5 percent on quantity and 3.7 percent on value between 2016 and 2018. The largest changes in US agricultural exports in terms of both quantity and value was to the Chinese market with reductions of 69.7 percent in quantity and 57.2 percent in value. All other major markets for US agricultural products picked up and helped offset the reduction of exports to China. Exports to other markets increased between 10.8 to 64.9 percent in quantity and 2.8 to 17.2 percent in value.

Table 1: Quantity of US Agricultural Exports, Metric Tons

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>Change from 2016 to 2018</th>
<th>Jan - Nov 2018</th>
<th>Jan - Nov 2019</th>
<th>Change in Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>218,293,619</td>
<td>216,437,418</td>
<td>219,279,957</td>
<td>0.5%</td>
<td>202,297,462</td>
<td>182,113,779</td>
<td>-10.0%</td>
</tr>
<tr>
<td>Grains &amp; Feeds</td>
<td>113,932,819</td>
<td>112,534,704</td>
<td>122,601,550</td>
<td>7.6%</td>
<td>113,618,151</td>
<td>90,164,568</td>
<td>-20.6%</td>
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<tr>
<td>Oilseeds &amp; Products</td>
<td>74,338,277</td>
<td>71,965,035</td>
<td>65,043,751</td>
<td>-12.5%</td>
<td>59,543,134</td>
<td>62,958,908</td>
<td>5.7%</td>
</tr>
<tr>
<td>Horticultural Products</td>
<td>12,734,844</td>
<td>12,663,390</td>
<td>11,925,267</td>
<td>-6.4%</td>
<td>10,897,377</td>
<td>11,196,861</td>
<td>2.7%</td>
</tr>
<tr>
<td>Livestock &amp; Meats</td>
<td>5,233,939</td>
<td>6,083,675</td>
<td>5,945,251</td>
<td>13.8%</td>
<td>5,444,969</td>
<td>5,786,307</td>
<td>6.3%</td>
</tr>
<tr>
<td>Poultry &amp; Products</td>
<td>3,639,532</td>
<td>3,768,029</td>
<td>3,846,198</td>
<td>5.7%</td>
<td>3,539,760</td>
<td>3,485,684</td>
<td>-1.5%</td>
</tr>
<tr>
<td>Other</td>
<td>8,414,209</td>
<td>9,422,585</td>
<td>9,907,939</td>
<td>17.8%</td>
<td>9,254,070</td>
<td>8,521,452</td>
<td>-7.9%</td>
</tr>
</tbody>
</table>


Table 2: Value of US Agricultural Exports, Thousand Dollars

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>Change from 2016 to 2018</th>
<th>Jan - Nov 2018</th>
<th>Jan - Nov 2019</th>
<th>Change in Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>134,678,261</td>
<td>138,160,060</td>
<td>139,596,576</td>
<td>3.7%</td>
<td>128,362,159</td>
<td>124,809,975</td>
<td>-2.8%</td>
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<tr>
<td>Horticultural Products</td>
<td>33,449,757</td>
<td>34,284,842</td>
<td>34,163,220</td>
<td>2.1%</td>
<td>31,193,448</td>
<td>32,249,350</td>
<td>3.4%</td>
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<tr>
<td>Grains &amp; Feeds</td>
<td>29,592,120</td>
<td>28,927,953</td>
<td>32,126,997</td>
<td>8.6%</td>
<td>29,636,668</td>
<td>25,912,103</td>
<td>-12.6%</td>
</tr>
<tr>
<td>Oilseeds &amp; Products</td>
<td>32,486,891</td>
<td>30,911,810</td>
<td>27,565,480</td>
<td>-15.1%</td>
<td>25,391,216</td>
<td>25,488,386</td>
<td>0.2%</td>
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<tr>
<td>Livestock &amp; Meats</td>
<td>17,090,894</td>
<td>19,032,559</td>
<td>19,602,926</td>
<td>14.7%</td>
<td>17,982,637</td>
<td>17,767,893</td>
<td>-1.2%</td>
</tr>
<tr>
<td>Cotton, Linters &amp; Waste</td>
<td>3,967,102</td>
<td>5,845,107</td>
<td>6,557,407</td>
<td>65.3%</td>
<td>6,149,867</td>
<td>5,689,110</td>
<td>-7.5%</td>
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<tr>
<td>Other</td>
<td>18,091,497</td>
<td>19,157,789</td>
<td>19,580,546</td>
<td>8.2%</td>
<td>18,008,323</td>
<td>17,743,133</td>
<td>-1.5%</td>
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Table 3: Quantity of US Agricultural Exports to Selected Countries/Regions, Metric Tons

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
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<td>182,113,779</td>
<td>-10.0%</td>
</tr>
<tr>
<td>Mexico</td>
<td>34,086,589</td>
<td>36,516,162</td>
<td>37,774,112</td>
<td>10.8%</td>
<td>34,688,950</td>
<td>33,835,074</td>
<td>-2.5%</td>
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<tr>
<td>Japan</td>
<td>21,856,292</td>
<td>23,244,683</td>
<td>25,968,563</td>
<td>18.8%</td>
<td>24,101,202</td>
<td>19,601,213</td>
<td>-18.7%</td>
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<tr>
<td>China</td>
<td>49,226,538</td>
<td>42,839,901</td>
<td>14,924,379</td>
<td>-69.7%</td>
<td>14,637,050</td>
<td>24,219,222</td>
<td>65.5%</td>
</tr>
<tr>
<td>Canada</td>
<td>11,848,797</td>
<td>12,163,578</td>
<td>13,492,469</td>
<td>13.9%</td>
<td>12,294,493</td>
<td>12,522,298</td>
<td>1.9%</td>
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<tr>
<td>EU</td>
<td>10,186,224</td>
<td>9,965,011</td>
<td>16,795,372</td>
<td>64.9%</td>
<td>14,913,786</td>
<td>9,805,136</td>
<td>-34.3%</td>
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<tr>
<td>Share of total</td>
<td>58%</td>
<td>58%</td>
<td>50%</td>
<td>50%</td>
<td>55%</td>
<td></td>
<td></td>
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Agricultural Policy and Its Impact on the Western States

Table 4: Value of US Agricultural Exports to Selected Countries/Regions, Thousand Dollars

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>Change from 2016 to 2018</th>
<th>Jan - Nov 2018</th>
<th>Jan - Nov 2019</th>
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<tr>
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<td>139,596,576</td>
<td>3.7%</td>
<td>128,362,159</td>
<td>124,809,975</td>
<td>-2.8%</td>
</tr>
<tr>
<td>Canada</td>
<td>20,306,928</td>
<td>20,608,280</td>
<td>20,871,264</td>
<td>2.8%</td>
<td>19,210,355</td>
<td>19,145,049</td>
<td>-0.3%</td>
</tr>
<tr>
<td>Mexico</td>
<td>17,826,862</td>
<td>18,597,998</td>
<td>19,095,662</td>
<td>7.1%</td>
<td>17,598,623</td>
<td>17,524,946</td>
<td>-0.4%</td>
</tr>
<tr>
<td>Japan</td>
<td>11,029,512</td>
<td>11,897,008</td>
<td>12,929,937</td>
<td>17.2%</td>
<td>11,957,681</td>
<td>10,808,007</td>
<td>-9.6%</td>
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<tr>
<td>China</td>
<td>21,394,461</td>
<td>19,475,893</td>
<td>9,146,625</td>
<td>-57.2%</td>
<td>8,734,606</td>
<td>12,266,683</td>
<td>40.4%</td>
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<tr>
<td>EU</td>
<td>11,522,621</td>
<td>11,437,566</td>
<td>13,509,683</td>
<td>17.2%</td>
<td>12,157,031</td>
<td>10,648,962</td>
<td>-12.4%</td>
</tr>
<tr>
<td>Share of total</td>
<td>61%</td>
<td>59%</td>
<td>54%</td>
<td>54%</td>
<td>56%</td>
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<td></td>
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</tbody>
</table>


A major change is observed for the period of January to November of 2019, export trends almost reversed compared to the same period in 2018. Mexico and Canada were marginally affected, but other major markets such as China, Japan and the European Union (EU), showed substantial changes over most of 2019. China significantly reduced the imports of U.S. agricultural products in both quantity and value in 2018, mostly due to the retaliatory tariffs on US products. China’s main agricultural imports from the US are oilseeds & products followed by grains & feeds, accounting for 35 and 15 percent, respectively in 2018. However, from January to November of 2019, China’s agricultural imports from the US increased by 65 and 40 percent in quantity and value, respectively. In addition, there was also an overall increase of US agricultural exports to Japan and EU countries in 2018 in both volume and value. In contrast, over the period of January to November of 2019 there was a significant decrease of US products exported to the EU and Japan. The value of grains & feeds and oilseeds & products experienced the largest decrease, 36 and 30 percent, respectively to the EU and 18 percent on grains & feed while no changes occurred for oilseeds & products to Japan. The increase of China’s imports of US grains & feeds and oilseeds & products more than offset the decrease of these agricultural products to Japan and EU.

The main reason for the apparent rebound in exports to China is that negotiations between the US and China to end the ongoing trade conflict progressed favorably in the last quarter of 2019 leading to the signing of the Phase 1 Agreement on January 15, 2020. The Phase 1 Agreement includes, among other things, a commitment that China will increase purchases of agricultural products above the 2017 baseline level of $24 billion by $12.5 and $19.5 billion over 2020 and 2021, respectively. There are concerns whether China will be able to abide by the terms of the agreement given the hefty goals on the agreement. However, if the Chinese comply with the terms of agricultural purchases it will provide relief for US producers, at least for the period of the agreement.

The US and Japan also signed a trade deal that would slash tariffs on $7 billion worth of US agricultural products such as cheese, wine, beef, pork, wheat and almonds. The tariff reduction will allow farmers the same access as TPP competitors in New Zealand, Australia and Canada. Finally, the USMCA cleared both legislative bodies and was signed by President Trump on January 20, 2020. Although no major changes occurred in agricultural trade compared to NAFTA, some changes could increase agricultural exports to Mexico and Canada. Among others, these changes include more access to Canada’s milk market, update on sanitary and phytosanitary regulations, and setting standards for biotechnology. These three major agreements came through at the end of 2019 and beginning of 2020 giving US producers hope to regain and/or expand foreign markets as well as reduce market uncertainty.

The focus of the next section of this article is an analysis of how these three trade agreements and a potential agreement with the EU may impact the US Western States. For the purpose of this article the Western States include Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington and Wyoming. Western States are important participants in U.S. agricultural trade accounting for 47.1 percent of all US agricultural exports in 2018 (Table 5). The primary agricultural exports from the Western States are tree nuts, fruits, vegetables, wheat, beef and veal, with shares above 70 percent of total US agricultural exports. Western States also account for over 50 percent of U.S. exports of hides, skins and cotton.

Primarily due to the trade conflict with China, 2018 was a bad year for U.S agricultural exports and hence not for Western States’ agricultural exports. Overall, Western States’ agricultural exports to China declined by 41.2 percent in 2018 compared to 2017 (Table 6). The reduction in exports were most pronounced in soybeans, soybean meal, rice and wheat with a decrease of 70 percent or above while exports of cotton, hides and skins, grain products, vegetable oils and other oilseeds declined by at least 30 percent. On the other hand, beef and veal exports almost doubled, 96 percent, and fresh vegetables and tree nuts went up by 52.3 and 34.4 percent, respectively. As mentioned above, towards the second half of 2019 a rebound occurred in agricultural exports to China and the Phase 1 Agreement was signed. These two events signal a more promising outlook is on the horizon, at least for the next couple of years.

Western States’ agricultural exports to Japan increased by a healthy 7.8 for percent from 2017 to 2018 (Table 7). Soybean meal, corn and rice exports increased by 37.1, 31.1, and 22.4 percent, respectively, while grain products, fresh vegetables and processed
fruits exports increased by over 10 percent. However, broiler meat, cotton and other poultry products decreased by 24.6, 16.5 and 13.4 percent, respectively. The outlook looks positive for US and Western States’ agricultural exports to Japan as the recent trade agreement could help US producers expand their share of the Japanese market and overcome the slow pace of 2019 exports.

Western States’ agricultural exports to Canada predominantly remained flat in 2018 compared to 2017 with an increase of 0.2 percent (Table 8). Although there was a significant increase of corn and soybeans exported to Canada, 136.2 and 85.5 percent, respectively, the reduction of processed vegetables, broiler meat, beef, veal and fresh fruit offset those gains. Once in place the USMCA could help increase Western States’ exports to Canada. In particular, the more favorable market access for dairy and a solution to Canadian wheat grading issues may provide an avenue for export growth.

Agricultural exports from the Western States to Mexico increased by 2.2 percent between 2017 and 2018 (Table 9). Tree nuts exports led the increase in exports to Mexico, increasing by 32.7 percent, exports of grains and oilseeds also increased by 15 percent. Among the agricultural exports that decreased are wheat, other livestock and vegetable oils. One of the factors mitigating the impact on the trade conflict with Mexico was the limited scope of retaliatory tariffs, relative to Western States’ exports. For example, a primary focus of Mexican retaliation was pork imports from the US, a product predominately originating outside the Western region. It is wise to maintain cautious optimism for a return to more normal marketing trends with the recent approval of the USMCA and that it may lead to returning robust growth for US agricultural exports to Mexico.

### Table 5: US and Western States Ag Exports to the World, 2018, Million Dollars

<table>
<thead>
<tr>
<th></th>
<th>2018 U.S. Exports Millions ($)</th>
<th>Western State Totals</th>
<th>Western States Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef and veal</td>
<td>$8,359.8</td>
<td>$6,133.5</td>
<td>73.4%</td>
</tr>
<tr>
<td>Pork</td>
<td>$6,402.8</td>
<td>$1,095.0</td>
<td>17.1%</td>
</tr>
<tr>
<td>Hides and skins</td>
<td>$1,459.5</td>
<td>$874.4</td>
<td>59.9%</td>
</tr>
<tr>
<td>Other livestock products</td>
<td>$3,008.1</td>
<td>$1,059.8</td>
<td>35.2%</td>
</tr>
<tr>
<td>Dairy products</td>
<td>$5,498.1</td>
<td>$2,690.7</td>
<td>48.9%</td>
</tr>
<tr>
<td>Broiler meat</td>
<td>$3,152.2</td>
<td>$423.5</td>
<td>13.4%</td>
</tr>
<tr>
<td>Other poultry products</td>
<td>$2,145.6</td>
<td>$415.2</td>
<td>19.4%</td>
</tr>
<tr>
<td>Vegetables, fresh</td>
<td>$2,586.2</td>
<td>$1,915.3</td>
<td>74.1%</td>
</tr>
<tr>
<td>Vegetables, processed</td>
<td>$4,343.9</td>
<td>$3,217.0</td>
<td>74.1%</td>
</tr>
<tr>
<td>Fruits, fresh</td>
<td>$4,648.9</td>
<td>$3,992.5</td>
<td>85.9%</td>
</tr>
<tr>
<td>Fruits, processed</td>
<td>$3,975.5</td>
<td>$3,414.2</td>
<td>85.9%</td>
</tr>
<tr>
<td>Tree nuts</td>
<td>$8,505.7</td>
<td>$8,364.6</td>
<td>98.3%</td>
</tr>
<tr>
<td>Rice</td>
<td>$1,693.8</td>
<td>$614.4</td>
<td>36.3%</td>
</tr>
<tr>
<td>Wheat</td>
<td>$5,389.4</td>
<td>$4,249.6</td>
<td>78.9%</td>
</tr>
<tr>
<td>Corn</td>
<td>$12,466.8</td>
<td>$3,504.9</td>
<td>28.1%</td>
</tr>
<tr>
<td>Feeds and other feed grains</td>
<td>$9,092.4</td>
<td>$3,229.1</td>
<td>35.5%</td>
</tr>
<tr>
<td>Grain products, processed</td>
<td>$4,222.9</td>
<td>$1,743.3</td>
<td>41.3%</td>
</tr>
<tr>
<td>Soybeans</td>
<td>$17,063.1</td>
<td>$3,797.7</td>
<td>22.3%</td>
</tr>
<tr>
<td>Soybean meal</td>
<td>$5,105.0</td>
<td>$1,136.2</td>
<td>22.3%</td>
</tr>
<tr>
<td>Vegetable oils</td>
<td>$2,766.5</td>
<td>$657.4</td>
<td>23.8%</td>
</tr>
<tr>
<td>Other oilseeds and products</td>
<td>$2,110.1</td>
<td>$1,018.6</td>
<td>48.3%</td>
</tr>
<tr>
<td>Cotton</td>
<td>$6,557.4</td>
<td>$3,731.3</td>
<td>56.9%</td>
</tr>
<tr>
<td>Tobacco</td>
<td>$1,049.4</td>
<td>$0.0</td>
<td>0.0%</td>
</tr>
<tr>
<td>Other plant products</td>
<td>$17,312.5</td>
<td>$8,094.9</td>
<td>46.8%</td>
</tr>
<tr>
<td>Total agricultural exports</td>
<td>$138,915.5</td>
<td>$65,373.2</td>
<td>47.1%</td>
</tr>
<tr>
<td>Total animal products</td>
<td>$30,026.1</td>
<td>$12,692.2</td>
<td>42.3%</td>
</tr>
<tr>
<td>Total plant products</td>
<td>$108,889.4</td>
<td>$52,681.0</td>
<td>48.4%</td>
</tr>
</tbody>
</table>

Lastly, Western States’ agricultural exports to the EU increased significantly, 8.3 percent in 2018 compared to 2017 (Table 10). Soybean meal, corn and broiler meat increased the most by 255.2, 182.6, and 143.7 percent, respectively. In addition, other grains and oilseeds increased as well as some of the grains and oilseeds that used to go to China were diverted to EU countries as the trade conflict with China was developing. Vegetable oils along with fruits and processed vegetables saw a reduction of exports. Although the EU markets have been a bright spot for US agricultural exports over the last couple of years, more uncertain times may lie ahead as the Trump Administration now turns its attention toward a trade deal with the EU. Presently the EU has resisted including agriculture in any trade deal with the US and the current administration has raised the possibility of new tariffs if negotiations are not successful. The recent experience with the China negotiations suggests producers may be in for another roller coaster ride before any agreement can be reached.

**Government Assistance to Farmers and Ranchers**

The decline in exports and depressed prices of some commodities attributed to the recent trade conflict with China and others have been major contributors to a decline in US net farm income. For example, results of a recent analysis by the University of Missouri Food and Agriculture Policy Research Institute (FAPRI) indicate an elimination of retaliatory tariffs on oilseeds; other crops and livestock products would result in an increase in net farm income of $3.9 billion over the 2019 baseline value (Westhoff et al., 2019).

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**Table 6: Western States Ag Exports to China, 2017 and 2018, Thousand Dollars**

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2018</th>
<th>Change in Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef and veal</td>
<td>$22,692</td>
<td>$44,588</td>
<td>96.5%</td>
</tr>
<tr>
<td>Pork</td>
<td>$83,608</td>
<td>$56,556</td>
<td>-32.4%</td>
</tr>
<tr>
<td>Hides and skins</td>
<td>$565,886</td>
<td>$363,918</td>
<td>-35.7%</td>
</tr>
<tr>
<td>Other livestock products</td>
<td>$108,454</td>
<td>$128,834</td>
<td>18.8%</td>
</tr>
<tr>
<td>Dairy products</td>
<td>$282,567</td>
<td>$244,902</td>
<td>-13.3%</td>
</tr>
<tr>
<td>Broiler meat</td>
<td>$10</td>
<td>$11</td>
<td>19.7%</td>
</tr>
<tr>
<td>Other poultry products</td>
<td>$10,226</td>
<td>$12,371</td>
<td>21.0%</td>
</tr>
<tr>
<td>Vegetables, fresh</td>
<td>$536</td>
<td>$817</td>
<td>52.3%</td>
</tr>
<tr>
<td>Vegetables, processed</td>
<td>$114,039</td>
<td>$106,955</td>
<td>-6.2%</td>
</tr>
<tr>
<td>Fruits, fresh</td>
<td>$193,786</td>
<td>$151,262</td>
<td>-21.9%</td>
</tr>
<tr>
<td>Fruits, processed</td>
<td>$116,444</td>
<td>$100,534</td>
<td>-13.7%</td>
</tr>
<tr>
<td>Tree nuts</td>
<td>$257,014</td>
<td>$345,308</td>
<td>34.4%</td>
</tr>
<tr>
<td>Rice</td>
<td>$275</td>
<td>$40</td>
<td>-85.5%</td>
</tr>
<tr>
<td>Wheat</td>
<td>$276,842</td>
<td>$83,737</td>
<td>-69.8%</td>
</tr>
<tr>
<td>Corn</td>
<td>$39,932</td>
<td>$14,110</td>
<td>-64.7%</td>
</tr>
<tr>
<td>Feeds and other feed grains</td>
<td>$244,247</td>
<td>$200,756</td>
<td>-17.8%</td>
</tr>
<tr>
<td>Grain products, processed</td>
<td>$388,894</td>
<td>$256,446</td>
<td>-34.1%</td>
</tr>
<tr>
<td>Soybeans</td>
<td>$2,720,775</td>
<td>$694,243</td>
<td>-74.5%</td>
</tr>
<tr>
<td>Soybean meal</td>
<td>$1,492</td>
<td>$2,594</td>
<td>73.9%</td>
</tr>
<tr>
<td>Vegetable oils</td>
<td>$16,050</td>
<td>$10,460</td>
<td>-34.8%</td>
</tr>
<tr>
<td>Other oilseeds and products</td>
<td>$30,767</td>
<td>$18,956</td>
<td>-38.4%</td>
</tr>
<tr>
<td>Cotton</td>
<td>$556,315</td>
<td>$525,990</td>
<td>-5.5%</td>
</tr>
<tr>
<td>Tobacco</td>
<td>$0</td>
<td>$0</td>
<td></td>
</tr>
<tr>
<td>Other plant products</td>
<td>$313,321</td>
<td>$368,597</td>
<td>17.6%</td>
</tr>
<tr>
<td>Total agricultural exports</td>
<td>$6,344,173</td>
<td>$3,731,986</td>
<td>-41.2%</td>
</tr>
<tr>
<td>Total animal products</td>
<td>$1,073,444</td>
<td>$851,180</td>
<td>-20.7%</td>
</tr>
<tr>
<td>Total plant products</td>
<td>$5,270,729</td>
<td>$2,880,806</td>
<td>-45.3%</td>
</tr>
<tr>
<td>Plant products listed</td>
<td>$4,957,408</td>
<td>$2,512,209</td>
<td>-49.3%</td>
</tr>
</tbody>
</table>

A number of other studies provide estimates of the damage to the price of specific commodities that reflect a wide range of possible impacts. In the case of soybeans, for example, estimates of the negative effect on prices from the disruption of trade with China range from a high of -$2.05 per bushel to as little as -$0.36 per bushel (Glauber, 2019). In an effort to mitigate the damage to US producers of commodities directly impacted by foreign government retaliatory tariff policies, the US instituted the Market Facilitation Program (MFP) (USDA/FSA, 2019). In addition, programs to provide for increased assistance to foreign market development and direct purchases of selected commodities were also put in place.

The MFP program began in September 2018 and was available for producers to enroll through January 15, 2019. Initially the program provided per-unit payments to producers based on 50 percent of their 2018 total production of eligible crops, which included corn, upland cotton, sorghum, soybean and wheat. In addition, dairy producers were eligible for payments based on their highest production history marketed during the full calendar years of 2011 to 2013. Hog producers were also eligible for payments based on their number of live hogs as of August 1, 2018. The list of commodities was subsequently amended to include payments to producers of shelled almonds and fresh sweet cherries.

A second round of payments that was announced on May 23, 2019 with a signup period continuing through December 20, 2019 followed the initial MFP. In a major departure from the first round of payments, the new program provided county-specific payments to a more inclusive set of commodities. Payments were based on a producer’s total acreage planted to eligible commodities in 2019.

<table>
<thead>
<tr>
<th>Table 7: Western States Ag Exports to Japan, 2017 and 2018, Thousand Dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>Beef and veal</td>
</tr>
<tr>
<td>Pork</td>
</tr>
<tr>
<td>Hides and skins</td>
</tr>
<tr>
<td>Other livestock products</td>
</tr>
<tr>
<td>Dairy products</td>
</tr>
<tr>
<td>Broiler meat</td>
</tr>
<tr>
<td>Other poultry products</td>
</tr>
<tr>
<td>Vegetables, fresh</td>
</tr>
<tr>
<td>Vegetables, processed</td>
</tr>
<tr>
<td>Fruits, fresh</td>
</tr>
<tr>
<td>Fruits, processed</td>
</tr>
<tr>
<td>Tree nuts</td>
</tr>
<tr>
<td>Rice</td>
</tr>
<tr>
<td>Wheat</td>
</tr>
<tr>
<td>Corn</td>
</tr>
<tr>
<td>Feeds and other feed grains</td>
</tr>
<tr>
<td>Grain products, processed</td>
</tr>
<tr>
<td>Soybeans</td>
</tr>
<tr>
<td>Soybean meal</td>
</tr>
<tr>
<td>Vegetable oils</td>
</tr>
<tr>
<td>Other oilseeds and products</td>
</tr>
<tr>
<td>Cotton</td>
</tr>
<tr>
<td>Tobacco</td>
</tr>
<tr>
<td>Other plant products</td>
</tr>
<tr>
<td>Total agricultural exports</td>
</tr>
<tr>
<td>Total animal products</td>
</tr>
<tr>
<td>Total plant products</td>
</tr>
<tr>
<td>Plant products listed</td>
</tr>
</tbody>
</table>

multiplied by their single-county payment rate. The single-county payment rates ranged from $15 per acre to $150 per acre based on the estimated negative impact the retaliatory tariffs had on the county. Under the new version of the MFP, the non-specialty crops covered include:

<table>
<thead>
<tr>
<th>Crop Type</th>
<th>2017</th>
<th>2018</th>
<th>Change in Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alfalfa hay</td>
<td>$580,028</td>
<td>$547,005</td>
<td>-5.7%</td>
</tr>
<tr>
<td>Barley</td>
<td>$134,670</td>
<td>$129,531</td>
<td>-3.8%</td>
</tr>
<tr>
<td>Canola</td>
<td>$43,168</td>
<td>$56,684</td>
<td>31.3%</td>
</tr>
<tr>
<td>Other livestock products</td>
<td>$207,629</td>
<td>$215,043</td>
<td>3.6%</td>
</tr>
<tr>
<td>Dairy products</td>
<td>$342,874</td>
<td>$343,044</td>
<td>0.0%</td>
</tr>
<tr>
<td>Broiler meat</td>
<td>$39,762</td>
<td>$36,187</td>
<td>-9.0%</td>
</tr>
<tr>
<td>Other poultry products</td>
<td>$63,286</td>
<td>$62,255</td>
<td>-1.6%</td>
</tr>
<tr>
<td>Vegetables, fresh</td>
<td>$1,393,044</td>
<td>$1,397,931</td>
<td>0.4%</td>
</tr>
<tr>
<td>Vegetables, processed</td>
<td>$945,504</td>
<td>$860,370</td>
<td>-9.0%</td>
</tr>
<tr>
<td>Fruits, fresh</td>
<td>$1,368,399</td>
<td>$1,302,986</td>
<td>-4.8%</td>
</tr>
<tr>
<td>Fruits, processed</td>
<td>$421,744</td>
<td>$432,325</td>
<td>2.5%</td>
</tr>
<tr>
<td>Tree nuts</td>
<td>$848,025</td>
<td>$903,009</td>
<td>6.5%</td>
</tr>
<tr>
<td>Rice</td>
<td>$53,592</td>
<td>$63,330</td>
<td>18.2%</td>
</tr>
<tr>
<td>Wheat</td>
<td>$13,732</td>
<td>$16,422</td>
<td>19.6%</td>
</tr>
<tr>
<td>Corn</td>
<td>$36,727</td>
<td>$86,738</td>
<td>136.2%</td>
</tr>
<tr>
<td>Feeds and other feed grains</td>
<td>$425,928</td>
<td>$426,502</td>
<td>0.1%</td>
</tr>
<tr>
<td>Grain products, processed</td>
<td>$896,081</td>
<td>$921,791</td>
<td>2.9%</td>
</tr>
<tr>
<td>Soybeans</td>
<td>$32,305</td>
<td>$59,911</td>
<td>85.5%</td>
</tr>
<tr>
<td>Soybean meal</td>
<td>$70,650</td>
<td>$78,792</td>
<td>11.5%</td>
</tr>
<tr>
<td>Vegetable oils</td>
<td>$125,123</td>
<td>$123,998</td>
<td>-0.9%</td>
</tr>
<tr>
<td>Other oilseeds and products</td>
<td>$140,366</td>
<td>$148,531</td>
<td>5.8%</td>
</tr>
<tr>
<td>Cotton</td>
<td>$345</td>
<td>$448</td>
<td>29.7%</td>
</tr>
<tr>
<td>Tobacco</td>
<td>$0</td>
<td>$0</td>
<td>-100%</td>
</tr>
<tr>
<td>Other plant products</td>
<td>$2,798,881</td>
<td>$2,793,592</td>
<td>-0.2%</td>
</tr>
</tbody>
</table>

**Source:** USDA GATS Standard Query (https://apps.fas.usda.gov/gats/ExpressQuery1.aspx)

Over the course of the two MFP initiatives, $8.59 billion in payments were made during the first tranche. As of January 21, 2020, the second tranche has distributed a total of $10.86 billion in payments. In the first round, the majority of payments were received by soybean producers in the amount of $7.0 billion (81 percent); cotton producers received $471 million (5 percent); both sorghum and wheat producers received around $240 million, (3 percent of the total for each); livestock producers received payments totaling $335 million (4 percent); corn producers received $132 million (2 percent); and non-specialty crops received $37 million (less than 1 percent of total payments).

In the second-round, payments to livestock producers accounted for around 4 percent of the total, 95 percent to non-specialty crop producers and the remaining 1 percent to eligible specialty crop producers. The expanded list of eligible non-specialty crops...
and county-level payments provided for a much broader geographic distribution of the MFP second round payments. Western States’ producers’ share in the government support programs is 37.4 percent, around $4.1 billion (Table 11). Payments for non-specialty crops took the lion’s share with $3.8 billion or 36.9 percent of total US payments followed by livestock payments with $145.3 million or 33.7 percent of total US payments. Although specialty crops payments were the lowest of all three categories, $136.1 million, they accounted for 81.6 percent of total US payments for specialty crops.

To have a better idea how important these payments were to producers in the Western States, Table 11 shows the percentage of the MFP payments to 2018 cash receipts for agricultural production. Total MFP payments to Western States accounts for about 2.3 percent of total cash receipts for agricultural production. North Dakota’s share is the highest where the MFP payments account for 7 percent of cash receipts, while California is the lowest with 0.4 percent.

Summary and Conclusions

The economic wellbeing of US agriculture is tied to a successful export sector that has been built on a reputation of providing a reliable supply of competitively priced products. US agricultural exports over the past few years have been hampered by a tumultuous series of trade policy actions that distorted traditional trade flows and created uncertainty in terms of the future of trade relations with some of our most important markets. On the positive side, the completion of three trade agreements over the end of 2019 and beginning of 2020 could provide some relief to US and Western States’ producers. In the short run, government assistance in the form of

| Table 9: Western States Ag Exports to Mexico, 2017 and 2018, Thousand Dollars |
|-----------------|-----------------|-----------------|
|                  | 2017            | 2018            |
|                  | Thousands ($)   | Thousands ($)   |
|                  | Change in Period | Change in Period |
| Beef and veal    | $718,338        | $776,456       | 8.1%  |
| Pork             | $251,948        | $215,701       | -14.4% |
| Hides and skins  | $84,228         | $81,060        | -3.8%  |
| Other livestock products | $255,718 | $205,619 | -19.6% |
| Dairy products   | $644,193        | $687,751       | 6.8%   |
| Broiler meat     | $68,717         | $66,654        | -3.0%  |
| Other poultry products | $118,673 | $125,281 | 5.6%   |
| Vegetables, fresh| $100,456        | $106,175       | 5.7%   |
| Vegetables, processed | $435,021 | $394,800 | -9.2%  |
| Fruits, fresh    | $489,605        | $531,227       | 8.5%   |
| Fruits, processed| $103,683        | $108,762       | 4.9%   |
| Tree nuts        | $347,381        | $461,003       | 32.7%  |
| Rice             | $105,800        | $97,206        | -8.1%  |
| Wheat            | $671,875        | $522,114       | -22.3% |
| Corn             | $743,739        | $860,507       | 15.7%  |
| Feeds and other feed grains | $330,835 | $356,192 | 7.7%   |
| Grain products, processed | $205,959 | $206,135 | 0.1%   |
| Soybeans         | $350,375        | $405,604       | 15.8%  |
| Soybean meal     | $128,773        | $148,039       | 15.0%  |
| Vegetable oils   | $116,154        | $96,214        | -17.2% |
| Other oilseeds and products | $104,272 | $93,965 | -9.9%  |
| Cotton           | $229,824        | $211,479       | -8.0%  |
| Tobacco          | $0              | $0             |        |
| Other plant products | $1,186,493 | $1,204,175 | 1.5%   |
| Total agricultural exports | $7,792,059 | $7,962,122 | 2.2%   |
| Total animal products | $2,141,815 | $2,158,523 | 0.8%   |
| Total plant products | $5,650,244 | $5,803,599 | 2.7%   |
| Plant products listed | $4,463,751 | $4,599,424 | 3.0%   |

the Market Facilitation Program has been critical in helping to ameliorate the negative impact of the recent trade conflicts on the income of US and Western States’ producers. However, in the long run, the continuation of such programs may be hard to sustain from both a budgetary standpoint and the potential effects on market signals and supply and demand fundamentals.

References


Table 10: Western States Ag Exports to EU, 2017 and 2018, Thousand Dollars

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2018</th>
<th>Change in Period</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Thousands ($)</td>
<td>Thousands ($)</td>
<td></td>
</tr>
<tr>
<td>Beef and veal</td>
<td>$185,215</td>
<td>$169,485</td>
<td>-8.5%</td>
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<tr>
<td>Pork</td>
<td>$1,617</td>
<td>$1,701</td>
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<tr>
<td>Hides and skins</td>
<td>$79,703</td>
<td>$97,537</td>
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<tr>
<td>Other livestock products</td>
<td>$117,987</td>
<td>$115,756</td>
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<tr>
<td>Dairy products</td>
<td>$57,139</td>
<td>$70,734</td>
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<tr>
<td>Broiler meat</td>
<td>$631</td>
<td>$1,537</td>
<td>143.7%</td>
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<tr>
<td>Other poultry products</td>
<td>$8,960</td>
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<td>Vegetables, fresh</td>
<td>$126,643</td>
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<td>Vegetables, processed</td>
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<td>Fruits, fresh</td>
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<td>Fruits, processed</td>
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<td>Tree nuts</td>
<td>$2,795,782</td>
<td>$2,872,698</td>
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<tr>
<td>Rice</td>
<td>$15,024</td>
<td>$16,492</td>
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<tr>
<td>Wheat</td>
<td>$121,037</td>
<td>$165,793</td>
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<tr>
<td>Corn</td>
<td>$31,813</td>
<td>$89,918</td>
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<tr>
<td>Feeds and other feed grains</td>
<td>$199,696</td>
<td>$235,063</td>
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<tr>
<td>Grain products, processed</td>
<td>$69,733</td>
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<tr>
<td>Soybeans</td>
<td>$364,269</td>
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<td>Soybean meal</td>
<td>$21,595</td>
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<tr>
<td>Vegetable oils</td>
<td>$85,564</td>
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<td>Other oilseeds and products</td>
<td>$125,461</td>
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<tr>
<td>Cotton</td>
<td>$12,430</td>
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<tr>
<td>Tobacco</td>
<td>$0</td>
<td>$0</td>
<td></td>
</tr>
<tr>
<td>Other plant products</td>
<td>$1,479,007</td>
<td>$1,479,655</td>
<td>0.0%</td>
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<tr>
<td>Total agricultural exports</td>
<td>$6,504,514</td>
<td>$7,043,939</td>
<td>8.3%</td>
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<tr>
<td>Total animal products</td>
<td>$451,251</td>
<td>$466,146</td>
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<tr>
<td>Total plant products</td>
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<td>$6,577,792</td>
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<tr>
<td>Plant products listed</td>
<td>$4,574,256</td>
<td>$5,098,137</td>
<td>11.5%</td>
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</tbody>
</table>
