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MIDSOUTH VIEWPOINTS

SPRING 2020

AGRICULTURE AND RISING GLOBAL WATER ISSUES

Water is the most important global natural resource, supporting all forms of life, from microscopic organisms to the largest beings on Earth. As the world's population grows, we are experiencing more issues with our freshwater levels and quality.

According to the United Nations World Water Development Report, global water demand is expected to increase 20 to 30% by 2050. Agriculture plays a major role in this growth, accounting for nearly 70% of global water use, while industrial operations account for roughly 19% and households and municipalities account for 12%. Agricultural consumption stems primarily from crop irrigation—the number one use of water globally.

While agriculture is a leading cause of many worldwide water issues, it is simultaneously a significant victim. Many agricultural practices are completely dependent on water, and there are no available alternatives to water use. Thus, the only solution to this issue is sustainable water management.

Poor agricultural water management has led to the depletion of aquifers, decreased river flows and salinization of nearly 20% of irrigated farmland around the world. Agriculture also contributes to the pollution of numerous bodies of water via field run-off containing certain chemicals and fertilizers, and poorly managed animal agriculture operations contribute to water pollution due to fecal run-off.

A report released by the World Health Organization estimates that nearly two-thirds of the global population—more than four billion people—deal with water shortage issues for at least one month out of each year. Additionally, almost 3 out of 10 people do not have access to safe water, amounting to roughly 2.1 billion people who do not have readily available water; 159 million people lack access to treated water and must obtain water from direct sources such as streams, rivers and lakes; and 4.5 billion people worldwide do not have properly managed sanitation services, causing major issues for safe fresh water supplies.

This generates much speculation on how a growing population and a changing climate will impact certain water-deprived regions. Several studies indicate that changing climates will eventually result in water levels to sufficiently support global food demands. However, regions that already struggle with water issues may take on even more challenges with climate change. Many expect that the global population will exceed 9 billion people by 2050, ultimately leading to a 50% increase in the global demand for food. This will undoubtedly contribute to the existing competition for water sources among agricultural producers in water-deprived regions.

Consumer preferences are also changing, as we are seeing demand for certain carbohydrates shift toward higher quality food items, such as meats, fruits and vegetables as well as organic goods, non-GMO goods and food items produced using sustainable methods. In certain regions of the world, the practices used to grow these higher quality goods require higher levels of water application for adequate production.

Going forward, governments around the world should recognize the threat presented by depleting and contaminated water supplies and implement proper policies and regulations to reverse course. Additionally, farm operations must recognize the impact they are having on local water sources. There are numerous conservation practices and technologies available to assist in sustainable water use so that future generations are left with cleaner and ample water supplies.

PRESERVING GROUNDWATER WITH SUSTAINABLE IRRIGATION

Arkansas ranks fifth nationwide when it comes to withdrawing water, according to a report recently produced by the United States Geological Survey. This report also ranked Arkansas third overall for irrigation withdrawals. Altogether, Arkansas uses roughly 4% of the nation's annual water, which is significant considering that it is the 33rd most-populous state in the country. The majority of Arkansas' water consumption comes from irrigating crops primarily in the eastern portion of the state where most of the state's crops are produced.

Arkansas is a state that has been blessed with an abundance of natural resources, water being one of them. Thus, it is important for Arkansas operators and landowners to recognize that our valuable aquifers are being depleted, and sustainable irrigation practices should be implemented to help preserve the State's groundwater. The University of Arkansas Division of Agriculture (UA) has recognized several forms of sustainable irrigation technology and practices to help farmers select a method that best applies to their operations.

Computerized Hole Selection (CHS) is a computer software application that can be implemented to evaluate furrow irrigation systems. These systems incorporate row lengths, field elevations, pipe elevations, flow rates, pressure and friction loss to calculate the proper holes to punch in poly-pipe, allowing a uniform application of water. This software can even be used in rice production to flood each bay between levees simultaneously, known as multiple inlet irrigation. Such uniform application of water throughout a field means a reduction of run-off, which ultimately leads to more efficient irrigation and water withdrawal. According to the UA, using Computerized Hole Selection systems can potentially reduce water usage and irrigation costs by 25% or more. Pipe Hole and Universal Crown Elevation Tool (PHAUCET) and Pipe Planner by Delta Plastics are two free CHS systems that producers may utilize to help regulate irrigation costs and water use.

Irrigation scheduling is another sustainable method recognized by the UA and consists of the determination of the timing and duration of irrigation, the amount of water needed for the crop and the soil water storage capacity to implement an efficient irrigation system. This method eliminates excessive water discharge and leads to a reduction in run-off water by utilizing soil moisture sensors and along with predetermined information about the specific location.

Surge irrigation is another option for controlling excessive water discharge with computerized and mechanized methods. By utilizing surge valves, small amounts of water are discharged down a furrow at once. When released in small surges, the water moves down the rows faster than it would in a conventional constant-flow system. These surge systems have the potential to reduce water use by 20-30%.

There are other technologies and management practices that reduce groundwater use and run-off, but those mentioned above are the easiest and most cost-effective to implement. More information regarding these and other sustainable irrigation methods can be found by visiting the UA Cooperative Extension Service online at www.uaex.edu and searching "water conservation."

2020 MID-SOUTH LAND VALUES AND LEASE TRENDS REPORT

NOW AVAILABLE: *2020 MID-SOUTH LAND VALUES REPORT*

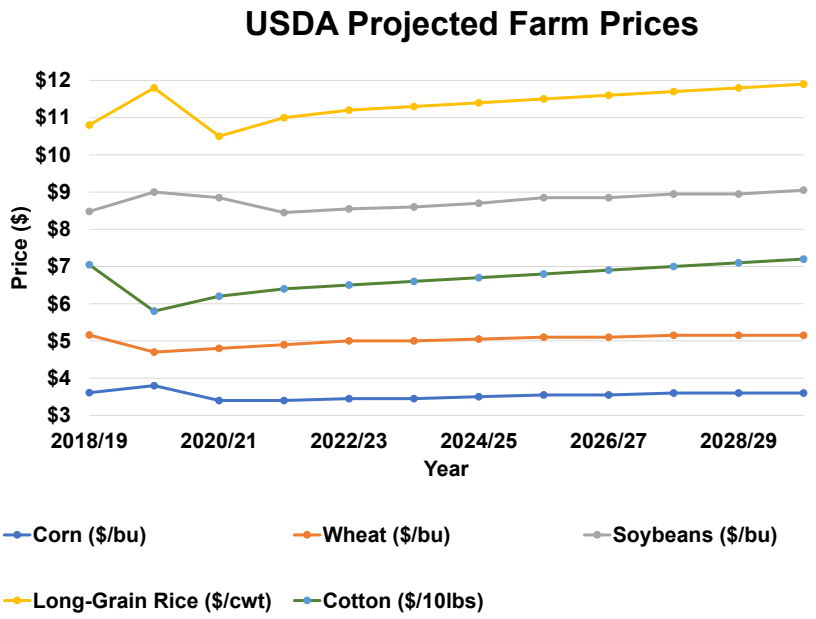
For the third year, the Mid-South Chapter of the American Society of Farm Managers and Rural Appraisers has issued its Mid-South Land Values and Lease Trends Report. Expanded from previous issues, the report contains more than 100 pages of information for landowners and farm operators.

"The report highlights what is happening with farmland values, sales and rents across Arkansas, Louisiana and Mississippi and parts of western Tennessee," said Tyler Mullins, President of the Mid-South Chapter of the ASFMRA. "We've also added editorials dealing with specialty subjects such as climate trends, timber, poultry, peanuts and even information on deer herd management."

Copies are $10 and may be obtained at:

https://www.asfmra.org/LandTrendMS or by contacting GFM.

The USDA has recently released its Long-Term Projections Report, which provides an outlook for agricultural and commodity markets as well as economic growth for the upcoming decade. According to the report, global real economic growth is projected to average 2.7% annually from 2020-2029, and the United States should see an annual economic growth of 1.8%. With this continuous economic growth in the US, stronger growth in developing countries around the world will lead to a slight decrease in the US share of global gross domestic product. The steady increase of global economic strength will ultimately lead to long-term gains in world food demand, global agricultural trade and demand for US agricultural exports.



All major field crops are expected to end the coming decade with higher prices than observed at the beginning. Soybean prices are projected to experience a short-term dip before increasing slowly but remaining fairly low. Feed grain prices are projected to remain low as well. Projected rice, cotton and wheat prices should see a steady rise from a low base. Net returns are also projected to see an upward trend.

Experts anticipate corn production in the US will grow over the decade due to rises in yields and prices that are likely to encourage planting corn over soybeans. In addition, expanding meat production is projected to increase demand for corn-based feed products. Estimated planted area will increase sharply in the short-term but will likely see a slight decrease and then remain relatively steady throughout the remainder of the decade. Corn-based ethanol is projected to see a rise in production slowly over the next ten years. While the US is expected to see a decline in domestic ethanol consumption, increasing ethanol exports are projected to offset the trends in domestic use. Throughout the decade, corn yields are expected to rise from 178.5 to 196.5 bushels per acre, and prices are predicted to rise gradually from $3.40 to $3.60 per bushel.

When compared to the previous five-year average, wheat production in the US is expected to see a gradual decline in planted acres due to slow growth in domestic use and exports. Rising global incomes support the increase of global wheat trade, while the US export growth is tempered by price competition coming from Russia, Ukraine and the European Union. When these competitors experience reduction in wheat supply, the US is positioned to increase its wheat exports. Wheat yields are expected to rise from 48.2 to 51.8 bushels per acre, and prices are expected to rise from $4.80 to $5.15 over the next ten years.

After experiencing sharp deceases in soybean production due to weather-related and trade issues from this past planting season, US soybean plantings are projected to increase and remain steady over the decade, supported by slowly rising prices and net returns. A growth in domestic demand for soybean meal and oil will lead to an increase in crush over the coming years. Throughout the decade, the US is expected to lose global soybean market share to Brazil and Argentina, dropping from 34% to 32.5%. Soybean yields are expected to rise from 50.5 to 55.5 bushels per acre, and prices are expected to rise from $8.85 to $9.05 throughout the decade.

US rice production is predicted to rebound 14% in the coming year, followed by a 10% drop in the following year to 2.6 million acres planted. From there, production is expected to remain steady at 2.60–2.65 million acres planted throughout the decade. Long-grain rice, the dominant class produced here in the Delta, should account for nearly all the area of change over the decade. Domestic consumption of rice is expected to remain the primary component of demand. Experts anticipate demand for imported rice from Asia will grow about 1.1% annually. US rice exports are expected to expand slightly after the coming year before leveling out in 2027 for the remainder of the decade. Over the course of the next ten years, long-grain rice yield is expected to increase from 7,545 to 7,891 pounds per acre, and prices are expected to rise from $10.50 to $11.90 per cwt.

Projected cotton prices should begin the decade at $0.62 per pound and finish the decade at $0.72 per pound. In the coming year, farmers are expected to plant 11.8 million acres of cotton, which should increase to 13.3 million planted acres by the end of the decade. The US is projected to remain the world's largest exporter of cotton with exports expected to grow from 15.5 million bales to 18.5 million bales by the end of 2030. However, estimates of strong export growth in Brazil and Australia may lead to a slight decrease in US global market share. Cotton yield is expected to rise from 845 to 890 pounds per acre, and prices are expected to rise from $0.62 to $0.72 throughout the decade.

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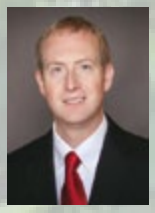

Jeffrey Hignight
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MIXED RESULTS FROM RECENT AUCTIONS

In February and March, we sold two farms by auction. The first was 305.7 cropland acres in Butler County, Missouri, near Poplar Bluff. This farm—100% irrigated and precision leveled—brought $7,100 per acre. Based on other sales, this was above our expectations. The buyers were two local operators.

In early March, we auctioned seven tracts in Clay County, Arkansas, and Dunklin County, Missouri, totaling 482 acres. This ended up being a partial sell with 3 of the 7 tracts meeting their reserves. During the bidding process the tracts that did not meet their reserve price had high bids ranging from $3,500 to $4,500 per acre. Two tracts for a total of 76 acres sold together for $5,300 per acre; one of those tracts was precision leveled and both had irrigation. The third tract to sell was 16 acres and brought $5,100 per acre. This tract was non-irrigated but had the best overall soil rating out of all seven tracts. The buyers on these three tracts were local operators.

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