Getting a handle on climate change is essential to the stability of agriculture

Over two decades ago when we began writing this column, people were debating whether the increase in the global average temperature was part of a natural cycle or the result of human activity, especially the use of fossil-based energy for a wide range of purposes from heating our homes and offices to providing the fuel we use in our automobiles, trucks, and farm equipment.

As we read up on the issue, it became clear that not only was human-activity-driven climate change (global warming) a reality it was also a serious threat to farmers around the world. We met small-holder farmers in Senegal who told us about the weather changes they had seen in recent decades: higher summer temperatures and lower annual rainfall levels. We read stories of farmers and fisherfolk in southeast Asia who saw their land disappear bit by bit to higher water levels.

In recent years the impact of global warming has become clear to farmers in the US. Some areas have seen unprecedented rainfall events while others have the opposite problem: higher temperatures and little rainfall. While periodic bad weather has always been farmers' nemesis, global warming is different. It has the potential to change rainfall and temperature patterns and thus crop production zones.

One of the concerns about addressing climate change has been the potential cost of mitigation. This is particularly true for farmers because they already face long periods of prices that are below the full cost of production. Additional short-term costs seem like a greater threat than the long-term problems that result from climate change.

It was with that conundrum in mind that the title of a recent article discussing the cost of addressing climate change caught our attention. The title, "The 2% solution to climate change" headlined an article in the January 31/February 2, 2022 print issue of Time magazine.

In that article, Yuval Noah Harari asks, "If humankind wanted to prevent catastrophic climate change, how big a check would we have to write?"

He then points out that "according to the International Energy Agency, achieving a net-zero carbon economy would require us to spend just 2% of annual global GDP [gross domestic product, a measure of global economic activity] over what we already do on our energy system." He also notes that other studies have come up with slightly higher costs, but all in the low single digits.

He makes the point that "in 1945, the US spent about 36 % of its GDP on winning World War II."

During the time that the two of us were in college, "US spending on space-related research saw a dramatic increase during the height of the space race with Russia, from 0.1% of GDP in 1958 to more than 4.4% in 1966" (https://tinyurl.com/4bas4428). Without that immediate level of investment, the satellite-based technology that we take for granted today would have been much slower in arriving.

Harari points out the benefits that result from addressing climate change, improved health outcomes and lower healthcare costs that result from reduced air pollution. He also notes that addressing climate change will "create numerous new jobs and economic opportunities."

While he does not address agriculture other than a cursory comment about farting cows and plant-based diets, we would point out that the quicker we make the necessary changes to achieve a zero carbon economy the sooner agriculture will benefit from reduced risks. In

addition, taking action to further reduce the level of CO_2 and equivalent gasses in the atmosphere would reduce some of the weather-related problems farmers are currently facing.

Unlike many other industries, agriculture is land based. Farmers cannot pick up and move their most important fixed asset. Getting a handle on climate change is essential to the stability of agriculture around the world. At less than 5 percent of GDP, the price is right.

Policy Pennings Column 1115

Originally published in MidAmerica Farmer Grower, Vol. 37, No. 361, February 25, 2022

Dr. Harwood D. Schaffer: Adjunct Research Assistant Professor, Sociology Department, University of Tennessee and Director, Agricultural Policy Analysis Center. Dr. Daryll E. Ray: Emeritus Professor, Institute of Agriculture, University of Tennessee and Retired Director, Agricultural Policy Analysis Center.
Email: hdschaffer@utk.edu and dray@utk.edu; http://www.agpolicy.org.