

Climate panel analyzes risks

The widespread flooding of this spring and early summer that resulted in delayed and prevented planting along with the extreme dry conditions and devastating fires last summer in California have raised the visibility of the issue of climate change for many people. While this is a controversial issue in some agricultural circles, it is an issue that must be dealt with. All indications are that the annual average global temperature is rising to levels that will affect local rainfall and temperature patterns and thus have a significant impact on agricultural production.

On August 7, 2019, the Intergovernmental Panel on Climate Change (IPCC) issued a special report titled “Climate Change and Land” that includes a “Summary for Policymakers” (<https://tinyurl.com/y5qukz9d>). This report covers the issues of “desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems.” These issues are of concern not just for farmers in vulnerable areas of the world, but for farmers and consumers in every corner of the US as well.

We may think that desertification is something that concerns those living along the edge of the Sahara, but farmers from California to Texas to points north are facing increasingly dry conditions as well.

Sustainable land management is an issue that has moved from a small cluster of innovative farmers to a concept that has to be at the heart of the daily work of every farmer.

Making sure that we produce and distribute food in ways that eliminate hunger is a responsibility that moves beyond the individual farmer to the whole of society and to the nature of the food and agricultural policy that we adopt as a nation and world.

We may think about greenhouse gas fluxes when a whiff of anhydrous ammonia burns our nasal passages, but the concept includes everything from the photosynthesis that removes carbon dioxide from the air to the respiration of all plants and animals.

The conditions people are faced with 30 or 40 years from now, depend on the decisions we make today. These decisions include the way we tackle the post-harvest loss of “25-30 percent of total food produced” and the sad fact that 2 billion adults are obese or overweight while 821 million are still undernourished. These involve not farm-level decisions but ones that have to be made at the individual and societal levels.

There are critical issues that face the agricultural community:

- Soil erosion from agricultural fields is estimated to be currently 10 to 20 times (no tillage) to more than 100 times (conventional tillage) higher than the soil formation rate.
- Global warming has led to shifts of climate zones in many world regions, including expansion of arid climate zones and contraction of polar climate zones
- Agriculture, Forestry and Other Land Use activities accounted for around 13% of CO₂, 44% of methane (CH₄), and 82% of nitrous oxide (N₂O) emissions from human activities globally during 2007-2016, representing 23% ... of total net anthropogenic emissions of [greenhouse gasses].
- The stability of food supply is projected to decrease as the magnitude and frequency of extreme weather events that disrupt food chains increases. Increased atmospheric CO₂ levels can also lower the nutritional quality of crops.

But none of this is chiseled in stone. There are multiple ways we can respond. We can make choices that mitigate the risks we face. The first step in this process is to understand the risks.

With that in mind, the IPPC report is not a lecture designed to shame us into action. Rather it describes the current situation and lays out the potential consequences of the choices we make.

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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>.

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