The U.S. Interstate Trade Will Overcome the Negative Impact of Climate Change on Crop Profit

|  |  |  |
| --- | --- | --- |
| Sandy Dall’Erba | Zhangliang Chen | Noé J Nava |
| ACE and REAL,  University of Illinois | ACE,  University of Illinois | ACE and REAL,  University of Illinois |
|  |  |  |

**ABSTRACT**

According to the current IPCC report, climate change will increase the probability of occurrence of droughts in some areas. Recent contributions at the international level indicate that trade is expected to act as an efficient tool to mitigate the adverse effect of future climate conditions on agriculture. However, no contribution has focused on the similar capacity of trade within any country yet. The U.S. is an obvious choice given that many climate impact studies focus on its agriculture and around 90% of the U.S. crop trade is domestic. Combining a recent state-to-state trade flow dataset with detailed drought records at a fine spatial and temporal resolution, this paper highlights first that trade increases as the destination state experiences more drought and inversely in the origin state. As a result, crop growers’ profit depends on both local and trade partners’ weather conditions. Projections based on future weather data convert the crop grower’s expected loss without trade into expected profit. As such, this paper challenges the estimates of the current climate impact literature and concludes that trade is expected to act as a $ 14.5 billion adaptation tool in the near future.

KEY WORDS: Drought Impact Evaluation, Intra-national Trade, Agricultural Profit.

CONTACT INFORMATION:

*Sandy Dall’Erba:* Professor in the Department of Agricultural and Consumer Economics (ACE), Regional Economics Applications Laboratory (REAL), University of Illinois at Urbana-Champaign

*Zhangliang Chen:* Post-doctoral student in the Department of Agricultural and Consumer Economics (ACE), University of Illinois at Urbana-Champaign, e-mail: [zchen105@illinois.edu](mailto:zchen105@illinois.edu).

*Noé J Nava:* PhD student in the Department of Agricultural and Consumer Economics (ACE), Regional Economics Applications Laboratory (REAL), University of Illinois at Urbana-Champaign.