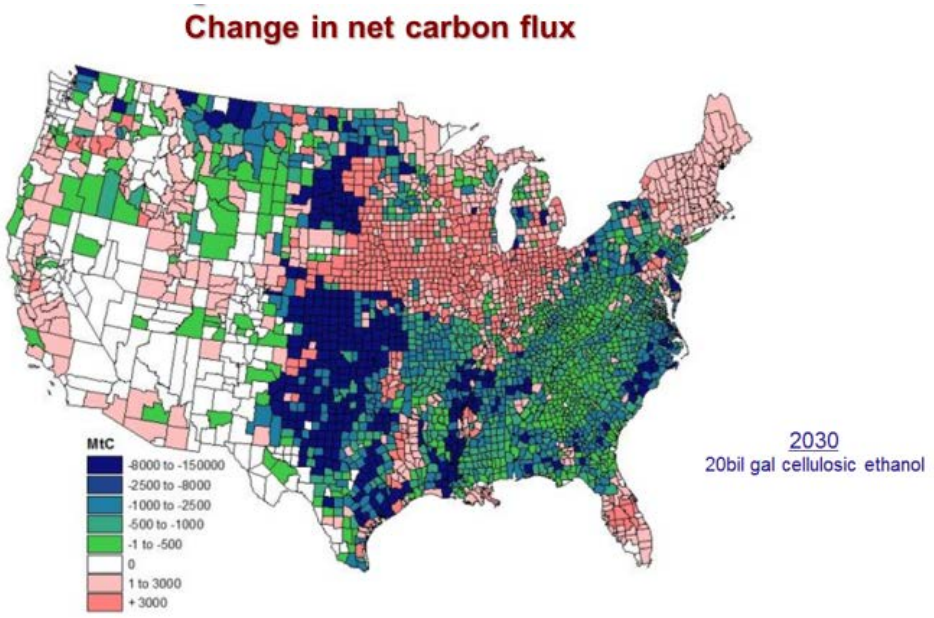
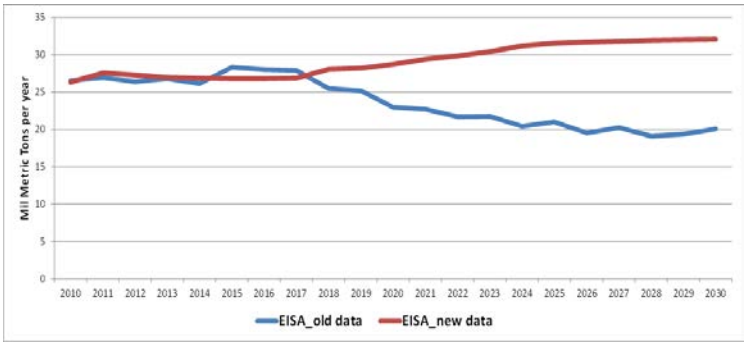
Projecting GHG Emissions from Agriculture: Effects of Shifting Trends in Cellulosic Feedstock Data

Recent updates of biomass feedstock data indicate that achieving US bioenergy mandates will rely more heavily upon crop residues and forest biomass than previously thought, and less upon herbaceous grasses. Considering the changes in estimated feedstock mix, total GHG emissions from the agricultural sector are estimated. If ethanol mandates are met by 2025, total GHG emissions will increase. Our earlier work projected that GHG emissions from agriculture would decline as a result of meeting mandates. Under the newest projection and using new data reported in the DOE's Billion Ton Update, emissions will increase from agriculture. New projections raise GHG emissions by 12 million metric tons carbon per year above old projections by 2030. The increase in projected GHG emissions is



due to a decline in herbaceous grass plantings (which sequester soil carbon), an increase in crop residue harvesting (which inhibits soil carbon increases), and an increase in forestland harvesting (where carbon is not accounted for yet in our model, but will likely raise emissions further). If reducing GHGs from agriculture is one objective of biofuel mandates, we suggest that policies should be adopted to either incentivize herbaceous grasses over other biomass feedstock, or restrict harvesting of crop residues and forest biomass.



For additional information see:

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Citation:

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