

Analysis of the Draft Impact Analysis

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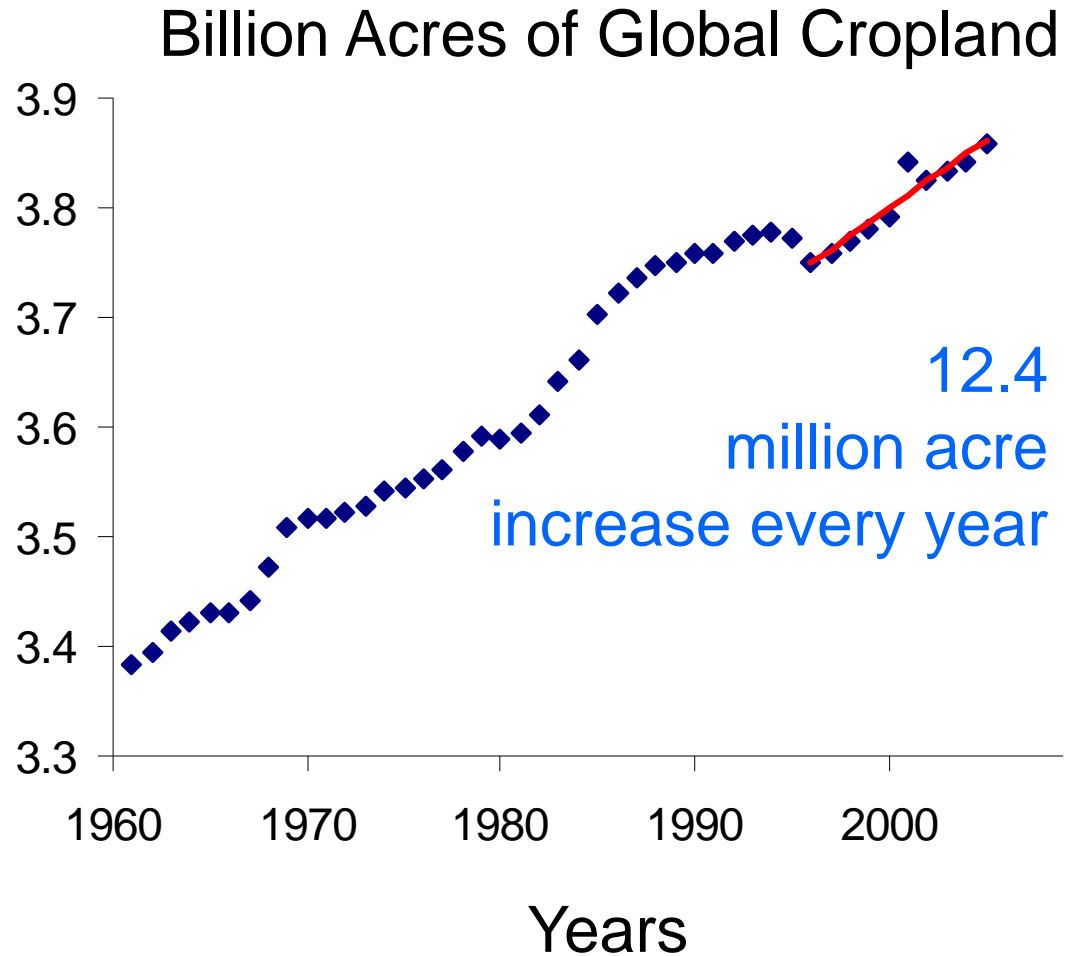
“(H) LIFECYCLE GREENHOUSE GAS EMISSIONS.—The term ‘lifecycle greenhouse gas emissions’ means the aggregate quantity of greenhouse gas emissions (including direct emissions and significant indirect emissions such as significant emissions from land use changes), as determined by the Administrator, related to the full fuel lifecycle, including all stages of fuel and feedstock production and distribution, from feedstock generation or extraction through the distribution and delivery and use of the finished fuel to the ultimate consumer, where the mass values for all greenhouse gases are adjusted to account for their relative global warming potential.

DRIA

- EPA followed the letter and the spirit of the law
- Contingent lifecycle assessment methods used incorporate best available estimates of indirect land use

Biofuels Require Additional Cropland

- Globally, demand for food is increasing faster than yields
- Therefore, any crop-based biofuel requires additional land



Where does additional cropland come from?

- Carbon emissions are specific to land type
- Satellite data are needed to determine which lands are converted
- EPA approach uses best available data for analyzing global land cover change

Comments on Content of Life Cycle Analyses

- Time Horizon
- Discounting
- Co-products

Time Horizon

- Essentially a policy decision, rather than a science decision
- Unfortunately, law lacks explicit guidance
- An assumption must be made about what time horizon the GHG reductions required in the law should occur by
- The dates listed in the law are 2008-2022
- A 2022 time horizon would be one reasonable interpretation of the law

Discounting

- Discounting should be applied to damages
- It does not make sense to discount carbon emissions per se
- Damages may be proportional to CRF (cumulative radiative forcing)
- CRF should be modeled for CO₂, CH₄, N₂O (Models: Bern, BTIME)
- CRF, rather than GWP-weighted emissions, should be used for discounting
- 3% discounting rate (OMB circular A-4)

Co-Products

DRIA: “We plan to evaluate and incorporate a least cost feed rationing approach for the final rule in both the FASOM and FAPRI modeling systems. This will include assumptions about inclusion rates and displacement ratios”

We encourage EPA to pursue this approach

Co-Products

1 lb of co-product displaces:

- FASOM

- 0.9 lb of corn
- 0.1 lb of soybean meal

- FAPRI

- 0.95 lb of corn
- 0.05 lb of soybean meal

- Fargione et al. (in prep) 2008 displacement

- 0.86 lb of corn
- 0.27 lb of soybean meal

Policy Observations

- Mandates with cutoffs: no improvement other than crossing the cutoff is rewarded
- Low carbon fuels standards: rewards incremental improvements in GHG emissions

Common Goals

- Produce domestic renewable liquid transportation fuel that reduces GHG emissions
- Reward incremental reductions in GHG emissions, including indirect land use, by both producers and farmers
- Build bridge to second generation biofuels
- Avoid stranded assets

Things that policy should reward

Corn ethanol plants that use:

- Biomass for process energy
- Increased process efficiency
- Corn from farmers with low N₂O emissions
- Efficient co-product use
- Corn yield increases
- Cobs for cellulosic ethanol