GREEN FIELDS, BROAD IMPACTS: UNPACKING THE ENVIRONMENTAL IMPLICATIONS OF THE 2023 FARM BILL

Environmental Law Institute
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GOBLIN FINGERS AND DRACULA FRUIT
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U.S. AGRICULTURE PRODUCES A VAST AMOUNT OF INEXPENSIVE FOOD

- 430 billion pounds of food produced annually
  - 3,683 calories / person / day (~2,200 recommended)
- 20 mm bales of cotton, 20 mm pounds of wool; 14 bb gallons of biofuel
- 20% of food produced exported; 15% imported; 35-40% is wasted
- Americans are paying one third less for their food than in 1980
- Farmers receive 7.8 ¢/ food $
INDUSTRIAL AGRICULTURE, LAND & LABOR: INCREASING CONCENTRATION AND DISPARITY

- >70% cropland acres are monoculture; 8% of farms control 40% of farmland
- 6% of operations produce 90% of meat, dairy, poultry
- 98% of farmland owned by whites; 60% of farm labor people of color
- Under 2% of US labor in agriculture (4 million)
AGRICULTURE DRIVES U.S. LAND AND WATER USE

- **62%** of land use in continental U.S. is agricultural

- **391 million acres** of crops and **798 million acres** of grazing land
  - Only **20%** of land is used for food we directly eat

- **80%** of water use
AGRICULTURE’S IMPACTS ON THE ENVIRONMENT AND PUBLIC HEALTH

PUBLIC HEALTH
- Diet-related disease over $1 trillion / year
- 70% American adults overweight or obese
- Major source of lead
- Antibiotics in feed -> antibiotic resistance

WATER POLLUTION
- Water pollution & soil erosion >$200B/year
- E.g. Gulf dead zone; Toledo drinking water
  - **50 million** Americans drink water contaminated with agricultural chemicals

TOXIC CHEMICAL EXPOSURE
- Pesticide residues found on **85%** of tested foods
- **17,000** people die each year from ag air pollution

WILDLIFE CONFLICT
- Livestock grazing v. wolves & bears
- Loss of habitat – up to **7.8 million acres** converted to cropland between 2007-2012
AGRICULTURE DRIVES ABOUT ONE QUARTER OF CLIMATE CHANGE

SOIL CARBON
- Forest and grassland conversion, tillage
- **7.8M+ acres** converted from 2008-2012
- Continuing impact of prior converted land – largely corn and cows

NITROUS OXIDE
- ~285x stronger > CO2
  - Excess fertilizer, animal manure

METHANE
- 85x stronger > CO2
- Cattle belches
- Animal manure
- Rice, food waste rotting in landfills

CARBON DIOXIDE
- Fertilizer and pesticide manufacture
  - On-farm energy and electricity
- Food processing, distribution, preparation

* Does not include GHG from land conversion, foregone sequestration; additional food system emissions from processing, refrigeration, cooking, transport, etc.
AGRICULTURE RELEASES CARBON ON CONVERSION AND CONTINUES TO SEQUESTER LESS CARBON

TWO TYPES OF CLIMATE IMPACTS FROM AGRICULTURAL LAND USE:

1. WE LOSE SOIL CARBON DUE TO LAND CONVERSION AND POOR PRACTICES

2. WE LOSE OUT ON ADDITIONAL CARBON SEQUESTRATION THAT WOULD HAVE CONTINUED IN UNDISTURBED VEGETATION
CLIMATE CHANGE THREATENS AGRICULTURE

PESTS, WEEDS, DISEASES
- Better living conditions for pests
- Invasive species expand and spread
- Reduced resilience to disease outbreak
- Reduced nutritional content of foods

EXTREME WEATHER
- Hurricanes and storms increase in frequency and severity
  - Hurricane Maria: $780M in ag losses
  - CAFO overflows

FLOODS AND DROUGHTS
- Irregular and extreme precipitation events more frequent and severe
  - 2016 CA Drought: $603M in ag losses
  - 2019 Midwest floods: 5-10M bushels corn and soy rotted; 19M acres left unplanted

HEAT WAVES AND WILDFIRES
- More frequent and severe
- Lead to yield declines
- Dangerous working conditions
POSSIBILITY FOR CHANGE: WHY THE FARM BILL MATTERS

• Farm Bill heavily influences what producers grow and raise, and where and how they do it

• Farmers and ranchers have demonstrated success and impact of alternative approaches

• Sustainable and climate-smart practices can reduce GHG, pollution, and increase soil carbon storage
2018 FARM BILL; 12 TITLES

- **Title I, Commodities.** Provides farm payments when crop prices or revenues decline for major commodity crops; disaster programs for livestock and tree fruit; margin insurance for dairy, marketing support for sugar.
- **Title II, Conservation.** Encourages environmental stewardship of farmlands; land retirement and easement programs.
- **Title III, Trade.** Supports agricultural export programs and export credit guarantee programs and international food aid.
- **Title IV, Nutrition.** Provides nutrition assistance for low-income households.
- **Title V, Credit.** Offers direct government loans to farmers/ranchers and guarantees on private lenders’ loans.
- **Title VI, Rural Development.** Supports rural business and community development programs.
- **Title VII, Research, Extension, and Related Matters.** Supports agricultural research and extension programs.
- **Title VIII, Forestry.** Supports forestry management programs run by USDA’s Forest Service.
- **Title IX, Energy.** Encourages the development of farm and community renewable energy systems and facilitates production, of biofuels.
- **Title X, Horticulture.** Supports specialty crops—fruits, vegetables, tree nuts, and floriculture and ornamental products – and certified organic and local foods.
- **Title XI, Crop Insurance.** Amends the permanently authorized federal crop insurance program.
- **Title XII, Miscellaneous.** Covers other types of programs, including livestock and poultry production and limited-resource and socially disadvantaged farmers.
FARM BILL EXPENDITURES: 2000-2030

Inflation-adj. billion dollars (2021)

- Non-farm bill: P-EBT
- Non-farm bill: MFP, CFAP
- Projected outlays

Fiscal year


Nutrition/SNAP

Crop insurance
Commodities
Conservation

$0 $25 $50 $75 $100 $125 $150 $175

2023 FARM BILL BASELINE (10 yrs, $b)

- Nutrition, $815
- Commodity, $55
- Conservation, $59
- Crop Ins., $95

Total: $904

- Trade, $4.2
- Horticulture, $2.1
- Research, $1.3
- Miscellaneous, $0.8
- Energy, $0.5