Amish farm: sustainable?
Terrace farming in Andes: sustained over 1000’s of years...
Biodiversity & sustainability
The Irish experience
Pesticide impacts:
CAFOs: pollution; antibiotic resistance
Industrial agriculture requires large amounts of fossil fuel (10 Cal of fossil fuel energy per Cal of food energy)

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The underground aquifer: unregulated; unsustainable competition

T & D Willey Farms newer well & pump
Extensive monoculture in Westlands
Fallowed land when water is lost

Congress' flawed laws
C.V.P.I.A. & E.S.A.

Congress, change the laws or we'll change Congress!
Salinization
Soil erosion
Nitrogen Gas in Atmosphere

Inorganic N in soil (ammonia; nitrates)

Nitrogen in Dead Organic Matter (DOM)

Animal protein & other N compounds

Plant protein & other N compounds

N-cycle in a diverse agricultural system
Disrupting the nutrient cycle

- Nitrogen Gas in Atmosphere
- Inorganic N in soil (ammonia; nitrates)
- Plant protein & other N cpds
- Animal protein & other N cpds
- Nitrogen in Dead Organic Matter (DOM)

An elegant solution becomes two huge problems
Farm families & cultural knowledge