Climate Change Readings

Warming increases risk of civil war in Africa

* Considers impact of higher temperatures (rather than rainfall) on likelihood of conflict
  + Historical climate proxies since 1400 find long-term fluctuations of war frequency follow temperature change cycles
  + Use a panel regression of climate variation and conflict events between 1981 and 2002. Find that a 1 decree celcius increase in temperature leads to 4.5% increase in civil war and 0.9% increase in conflict incidence.
  + Predict future temperature patterns based on World Climate Research program, with varying degrees of certainty around the estimates. Projections for Africa average 0.7-1.6 degrees celcius
  + Additional 400,000 battle deaths if future conflicts are equally deadly.
* Why?
  + Temperature can affect agricultural yields, reducing yields by 10% - 30% per degree of warming.
  + Reduced crop yields 🡪 socioeconomic consequences for agricultural households and agricultural societies
  + Also violent crime and non-farm producivitiy can decline with higher temperatures (but less central)
* Caveats:
  + Conflict may respond to and cause variation in economic performance and democratization
* Implications:
  + Donors can help reduce conflict risk by helping African farmers adapt to extreme hete
  + Insurance schemes to protect poor from adverse climate shocks could help.

Crop-damaging termperatures increase suicide rates in India

Context:

* 130,000 lives lost to suicide in India annually; drought and heat feature prominently, driving debt burdens.
* Indian national government launched 1.3 billion climate-based crop insurance scheme motivated as suicide prevention policy

Study:

* -Data on reported suicides in the country from 1967-2013, pair with information on agricultural crop yields and climate data
* Find that for days above 20 degrees celcius, a 1-degree increase during growing season increases annual suicides by 0.008/100,000 people; or 67 deaths (a 3.5% increase).
* Spikes in temperature do not matter in non-growing seasons
* Crop yields act similarly to suicides
* Includes lagged climate variables, which strongly influence suide rates – suggesting not through aggressive behavior or other temporary effects. Beneficial rain shocks have positive effects
* No evidence of adaptive behavior over time, by wealth, by hotter vs. cooler areas.

*Jayachandran et al*

*Cash for Carbon*

Context:

* Land-use change (mostly deforestation) responsible for 9% of carben emissions
* Randomized evaluation of Payments for Ecosystem Services – offered private owners in Uganda payments if they do not clear trees.
  + Concerns of “inframarginality”/”additionality” – paying people for what they would have done anyways
  + Concerns about “leakage” – individuals shifting their tree cutting.
* For those randomly selected villages, PFOs had to enroll all their forest. Those who complied received $28/hectare of forest/year, paid in cash.
* Spot checks for recent tree clearing; additional payments for planting
* Use high-resolution commercial satellite to determine which areas are covered vs. not. Conducted household survey.
* 32% take-up among those offered. Effect of treatment on conserving is 28%. That is, 88% of enrollees complied. Effect on payments was $36. Per enrolled person, average payment was $113.
* Challenges in convincing people to enroll – lack of information, logistics of enrolling, contract seemed complex, worried it was a land grab
* Enrollment is unrelated to predicted deforestation, good for story about additionality.
* Average tree loss in control group was 9.1%. Those in PES saw considerably less tree loss. , roughly half.
* Leakage and spillovers? Look at net effects – all the forest in the village, not just PFO.
* Program averted 0.326 ha of deforestation per eligible PFO. Cost was $0.20 to delay each megaton of CO2 emisions. Maybe 0.46 at worst. This is very cheap.