Agricultural Data

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Outline

- Data requirements
  - agricultural data
  - socio-economic data
  - geographic data
  - soil data
  - climate data
- Sources of data

Agricultural data

- Land values
  - If available best indicator of long-term profitability of land
- Farm revenues
  - Problems if they reflect atypical shocks
    - Output prices
    - Input prices
    - Yields
- Farm characteristics
- Land in farm and use of land
- Input use
- Output

Surveys

- Important to guarantee representativeness of sample
- Right selection of the sampling period
  - End of growing season preferable
- Geo-positioning of plots
  - If privacy is an issue it might not be revealed and only used anonymously
- Specific information on terrain (flat, hillside, etc…)

Socio-economic characteristics

- Household data
- County-level data

Geographic data

- Soil data
  - FAO dataset available for all world regions
  - Additional data from local sources
- Elevation and other information on terrain
  - Available from USGS at 1x1 km resolution
- Distance from metropolitan areas, ports
- Water availability

Climate data

- Present climate data
  - CRU dataset provides temperature and precipitation climatologies from 1961-1990 at global level
  - Interpolation at county level
  - Right definition of seasons
- Other datasets
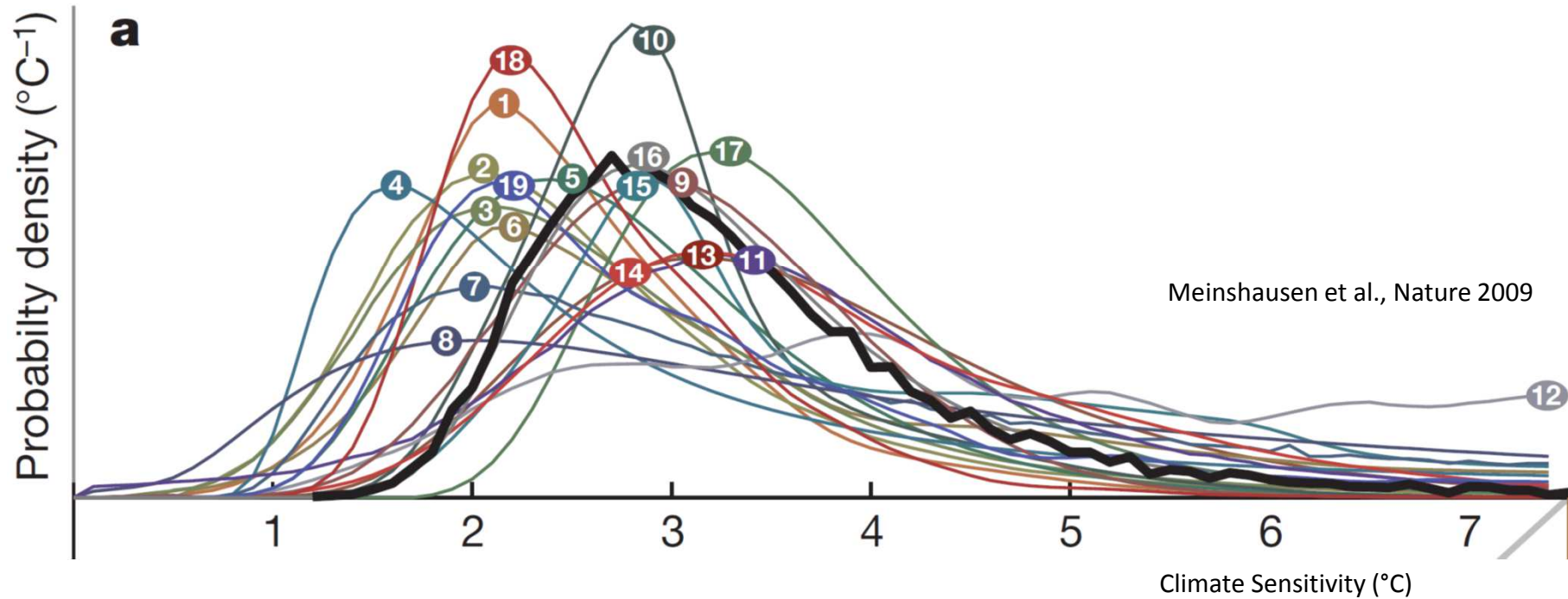 - US satellite data for temperatures
  - Weather station data

Future climate scenarios

- Large number of future climate change scenarios available from IPCC data distribution center
- Data available for several SRES scenarios and different future time periods
- Important to recognize uncertainty associated to future climate change scenarios
  - Selection of models and scenarios
  - Selection of number of models and scenarios
  - Selection of indicators (max, min, mean, st.dev.)
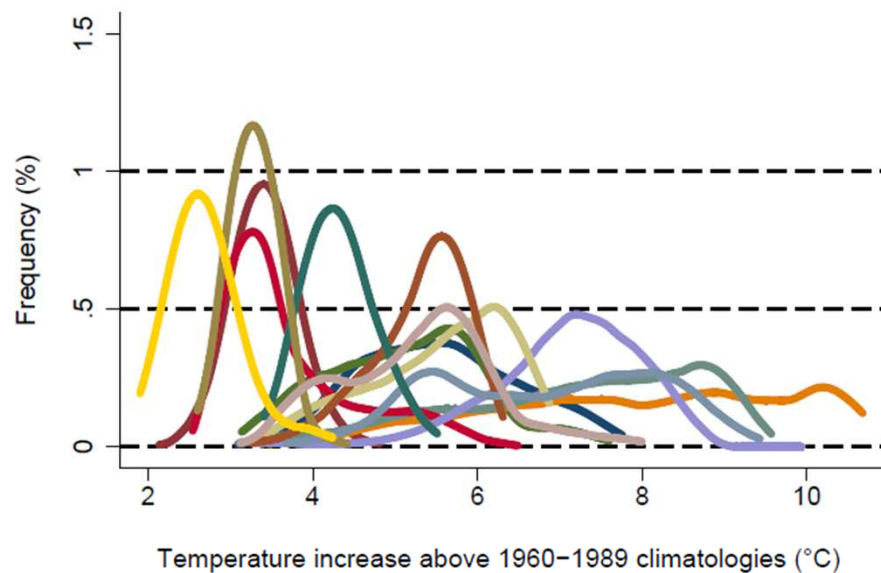
Uncertainty across GCMs

- Global climate sensitivity for doubling CO2 concentrations

Meinshausen et al., Nature 2009

Uncertainty across models at regional level

- Temperature change in US counties