Many sectors are concerned about weather and climate impacts on the now-30 year scale such as:

- Infrastructure & Operations
- Water/Energy providers
- Insurance/Reinsurance
- Disaster Risk Reduction
- Civil Engineering
- Transportation
- Food/Agriculture
- Human Health
- Urban Sustainability
- Ecosystems
- Arctic
- Sustainable Development

While these sectors are all vulnerable to extreme weather and climate, many have the ability to adapt at various timescales.
Numerous Agencies are interested in this as well

Climate certainties, uncertainties and outliers
  • What do we know and don’t know?

What are our reasonable bad fears?
  • Rapid West Antarctic Ice Sheet collapse & SLR nonlinearities
  • Feedbacks that accelerate climate change
  • Continued ocean acidification
  • Permanent shifts in atmospheric circulation
  • Cotemporaneous droughts/floods -> markets
  • Rogue geoengineering
  • What else?

Where is society vulnerable?
  • Regional hotspots, stability, transitions
Integrated framework

Wilhelmi and Hayden (2010, ERL)
Mumbai: Middle class household vulnerability to 2015 extreme precipitation & flooding
A bit like the Wild West out there...
Impacts on Global Agricultural Markets

PDSI for Year: 2000
VIA30 - Vulnerability Impacts Adaptation: Decisions from now to 30 years

Question: Given the collection of:
  - Large Ensemble
  - Medium Ensemble
  - Perturbed physics runs
  - CMIP Multimodel Ensemble

Can we develop robust methods to quantify natural and forced components of climate to assess societal vulnerability, impacts and adaptation options in the now to 30-year timeframe?