

Frameworks for Addressing Climate Change: Information, Incentives, and Institutions

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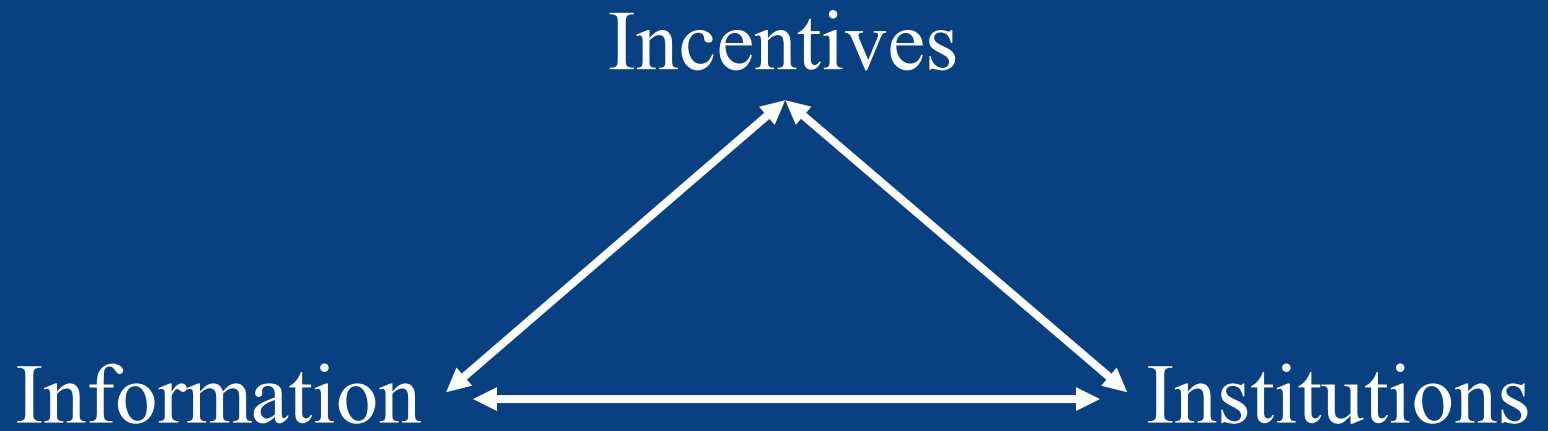
Harvard Climate Forum
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What should be our goals for addressing climate change?

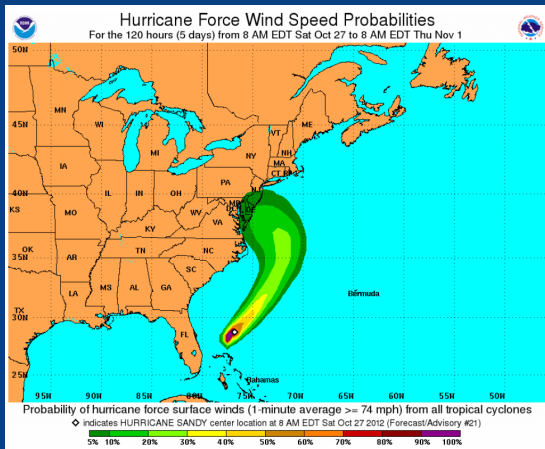
UN Framework Convention on Climate Change Objective

“The ultimate objective of this Convention... is to achieve... stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.”

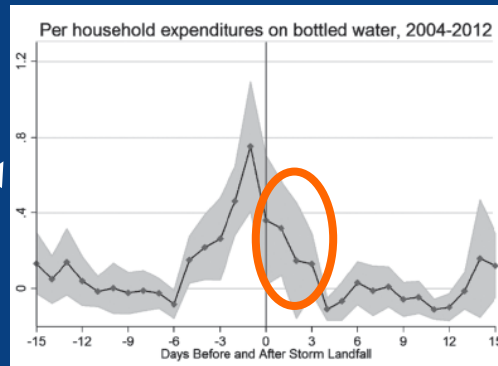
– Article 2, UN Framework Convention on Climate Change



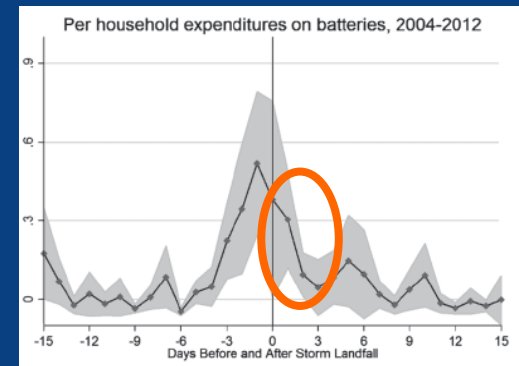
Example of Information: Communicating Hurricane Forecasts



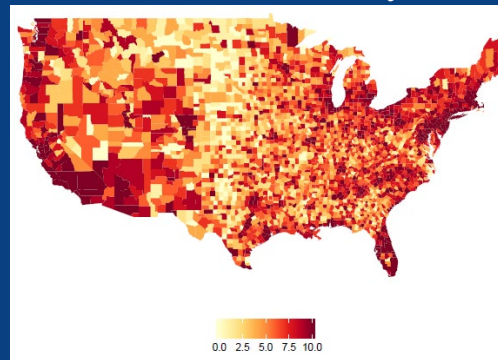
Bottled Water Purchases



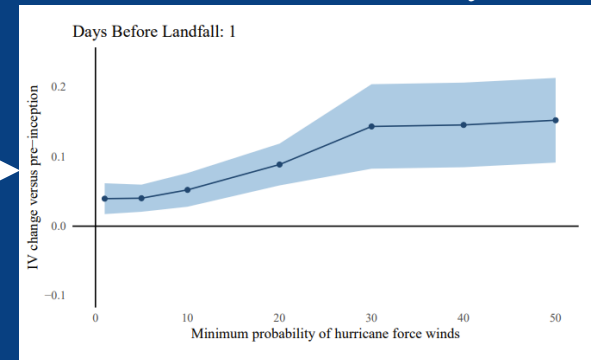
Battery Purchases



Firm Establishments by County



Stock Price Volatility



Example of Information: Bangladesh Cyclone Communication

Year	Cyclone	Wind Speed	Mortality
1970	Bhola	223	500,300
1985	Urir Char	154	11,069
1991	Ghorki	225	138,958
2007	Sidr	250	4,234
2020	Amphan	270	30

- Salient risk: strong incentive to act on risk information
- Critical institution: wireless communication

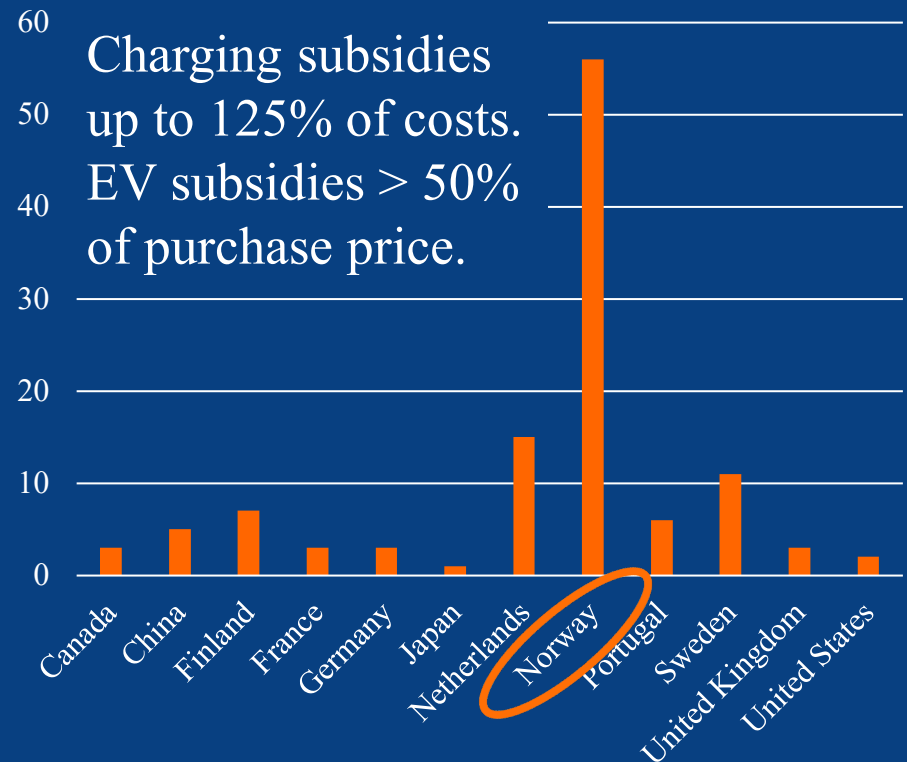
Example of Incentives: Electric Vehicles

EV Counts, Top 5 U.S. MSAs, 2014

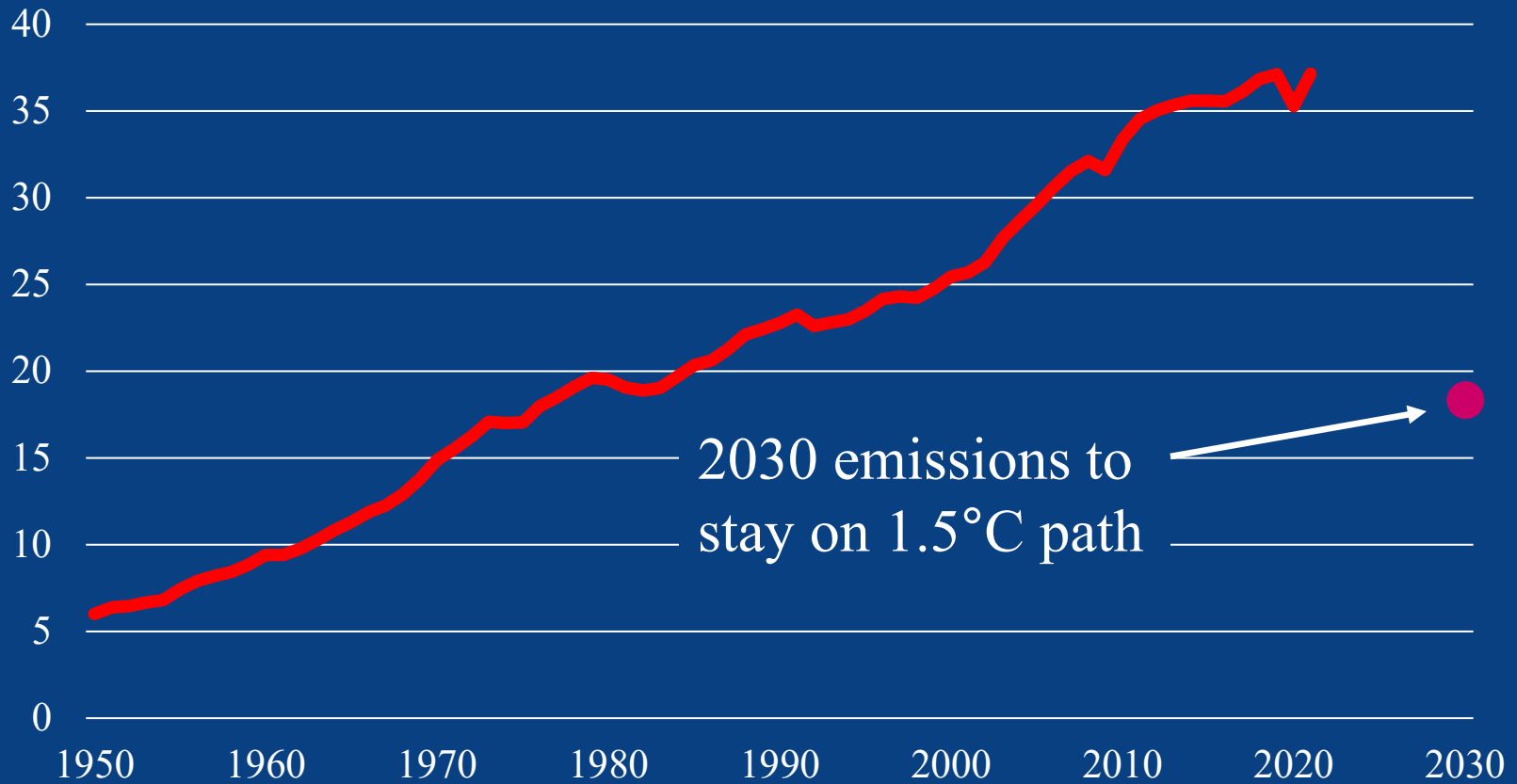
City	# Vehicles
Atlanta	14,196
Los Angeles	13,854
San Jose	11,170
Oakland	8,131
San Francisco	6,437

In addition to federal tax credit,
Georgia had a \$5,000 per EV subsidy.

Market Share of New EVs, 2019 (%)



Example of Incentives: Global CO₂ Emissions (billion tons)



Example of Institutions: Choice of Policy Instrument

Subsidize investment in
zero-emissions technologies



Prescribe zero-emissions
technologies through
regulations

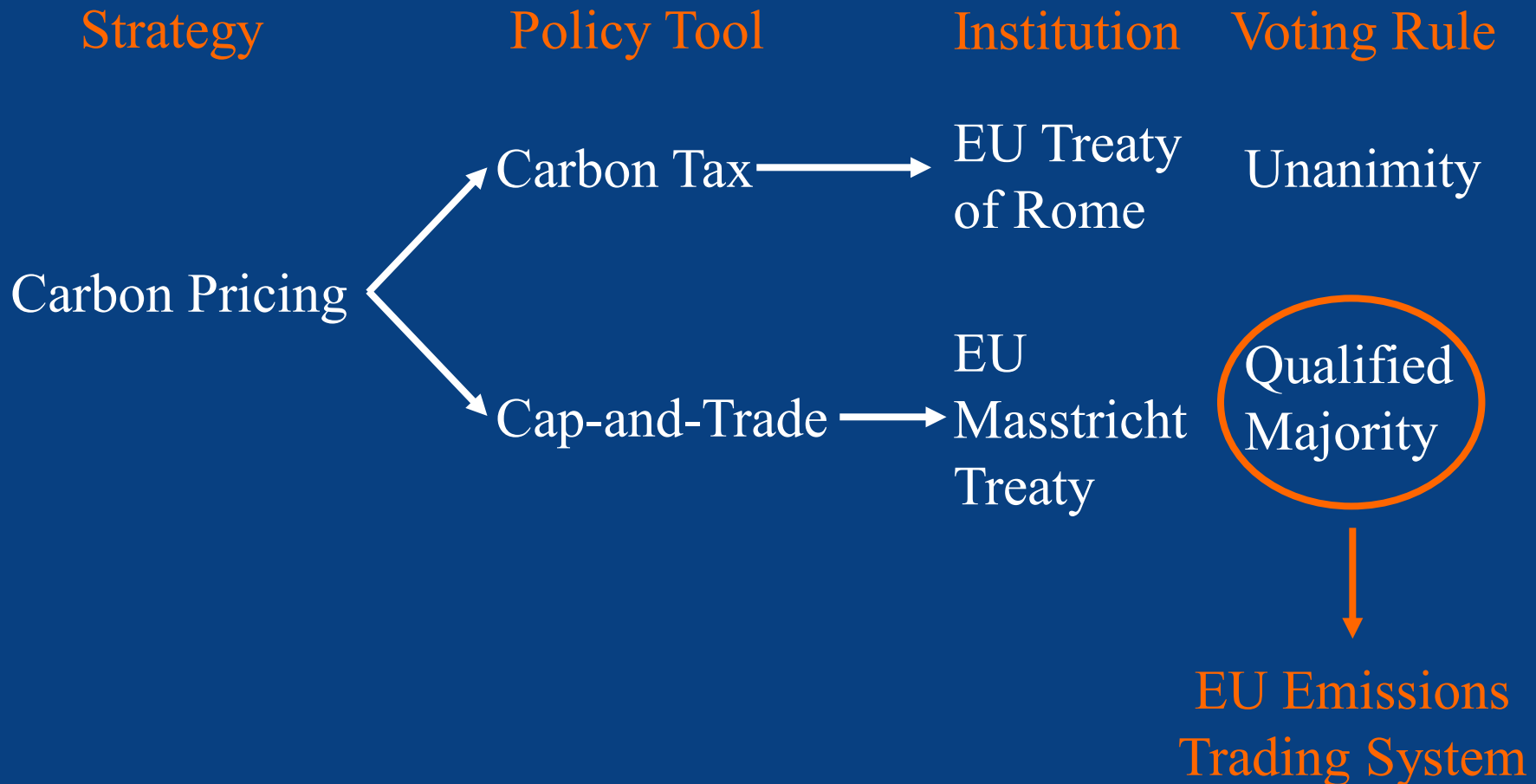


Raise the price of
fossil energy



Why does the
Inflation Reduction Act
Promote only the first
of these three
policy approaches?

Example of Institutions: Carbon Tax v. Cap-and-Trade in EU



Information

- Who demands information?
- Who supplies information?
- How is information produced? Processed?
Communicated?
- When can new information leverage incentives?
- What institutions enable information production?

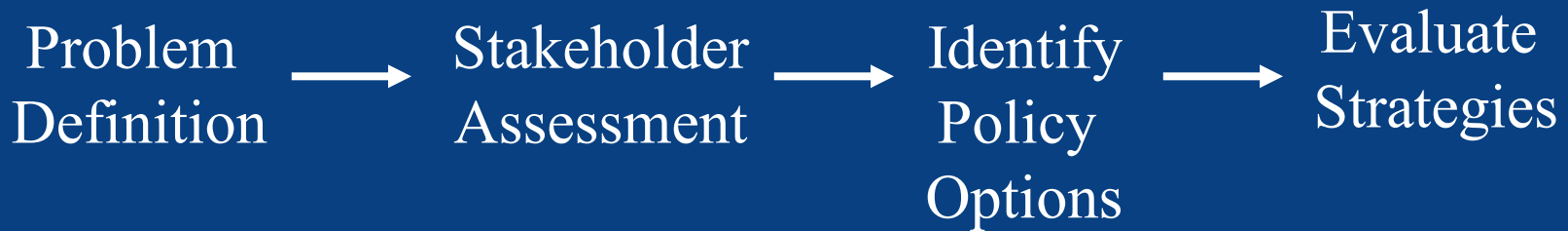
Incentives

- Who has incentive to reduce climate change risks?
- Who has incentive to supply information?
- Who has authority to change incentives decision-makers face?
- How do institutions influence incentives and options for changing incentives?

Institutions

- How can institutions enable production of information and improved incentives?
- When do institutions constrain policy options?
- Who can reform or develop new institutions?

Evaluating Climate Change Risk Reduction Strategies

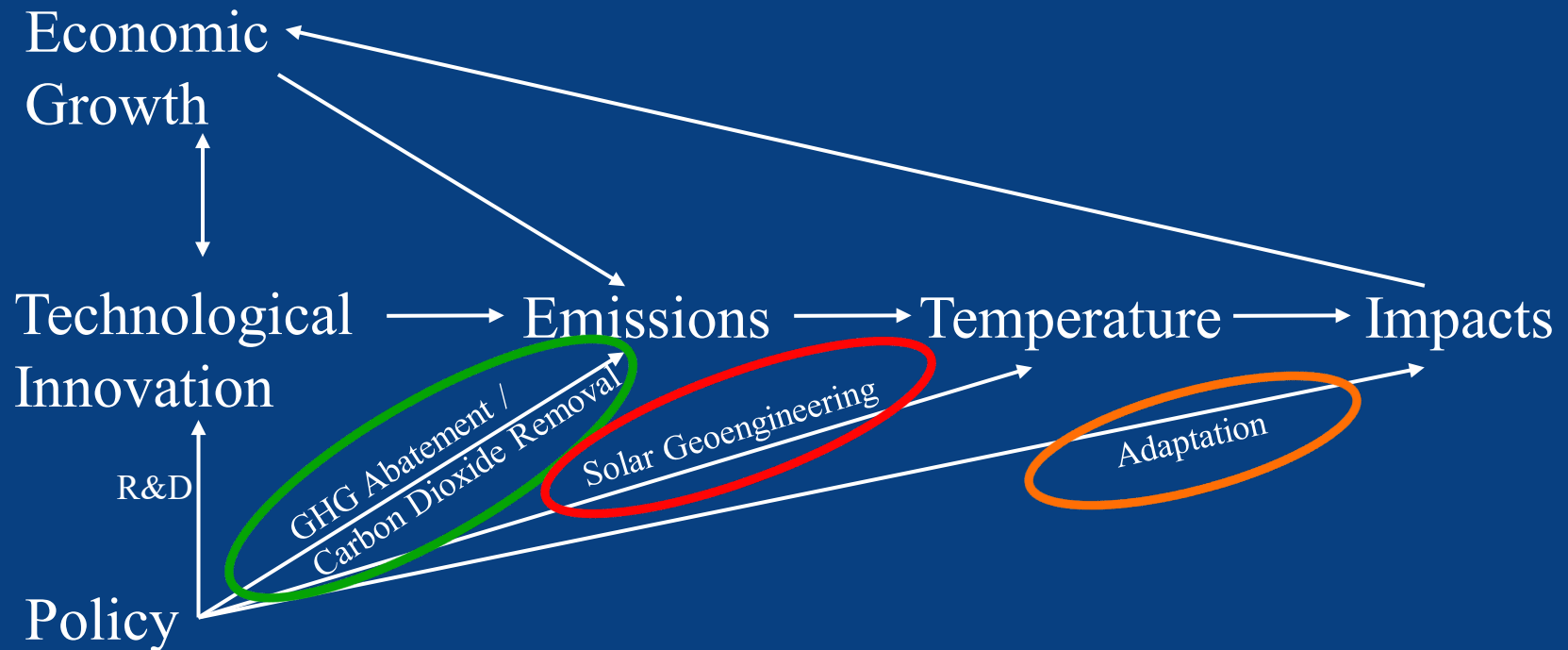


Address Information, Incentives, Institutions questions at each stage.

Examine perspective of all stakeholders and decision-makers:

- Individuals
- Businesses
- Non-profit organizations
- Local and state governments
- Federal government
- International organizations

Strategies for Reducing Climate Change Risks



Reduce climate change risks through:

Prevention

Resilience

Amelioration

Evaluating Climate Change Risk Reduction Strategies

Decision-Maker	Emission Abatement	Adaptation	Solar Geoengineering
Individual			
Business			
Non-profit Organization			
Local government	Assess role of information, incentives, institutions for each decision-maker and risk reduction strategy		
State Government			
National government			
International Organization			

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