

WORLDS @ 2050

**Policy making
for the better future**

Government and Foresight

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FORESIGHT: Supporting the Legislative Function*

*Remarks citing U.S. Government Accountability Office (GAO) based on published work and otherwise do not reflect the views of GAO

Overview

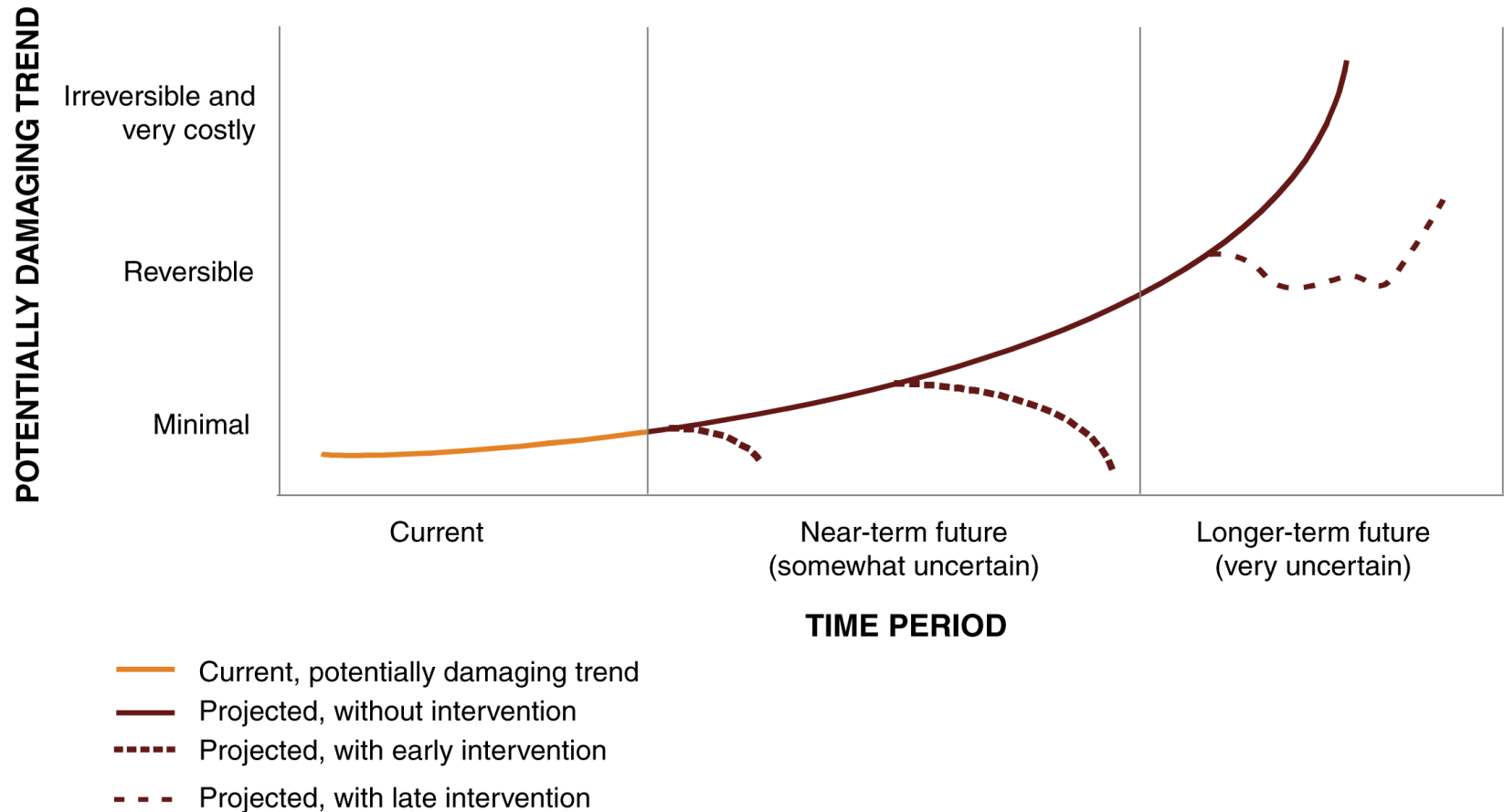
- Importance of foresight
- Foresight and the legislative function
- Early warning and examples of long-term studies from U.S. Congressional agency
- Integrating foresight with evidence-based concerns
- Implications for emerging role of citizen engagement
- Incorporating foresight in policy and decision-making

Importance of Foresight

- The process by which one comes to a fuller understanding of the forces shaping the long term future . . . prepares us to meet the needs and opportunities of the future . . . should be taken into account in policy formulation, planning, and decision making . . . (Coates, 1985)
- Foresight identifies key trends and emerging challenges before they reach crisis proportions (Comptroller General of the United States, 2013)

- U.S. Congress
 - Government Accountability Office
 - Center for Strategic Foresight (2018)
 - Science, Technology Assessment and Analytics Team (2018)
- Korean National Assembly
 - Creation of National Assembly Futures Institute (NAFI, 2018)
- Finland's Committee for the Future
- Scotland's Futures Forum

Foresight for Early Action

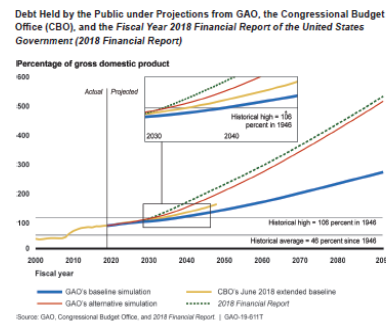


Source: Adapted from D. Rejeski, "S&T Challenges in the 21st Century: Strategy and Tempo," in A. Teich et al (eds.) AAAS Science and Technology Policy Yearbook 2003.

GAO Studies and Longer-Term Future

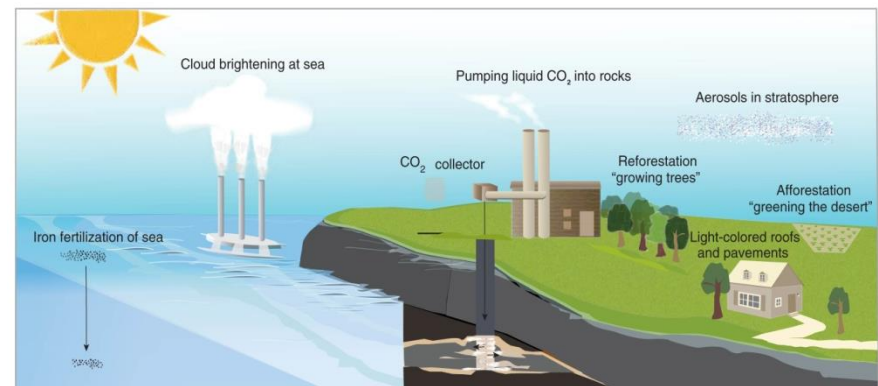
Quantitative Scenarios/ Simulations

- *Long-term fiscal simulations (2048, 2092)*
- *Estimating cost of options for storage of nuclear waste (2108, 2240, 2508)*



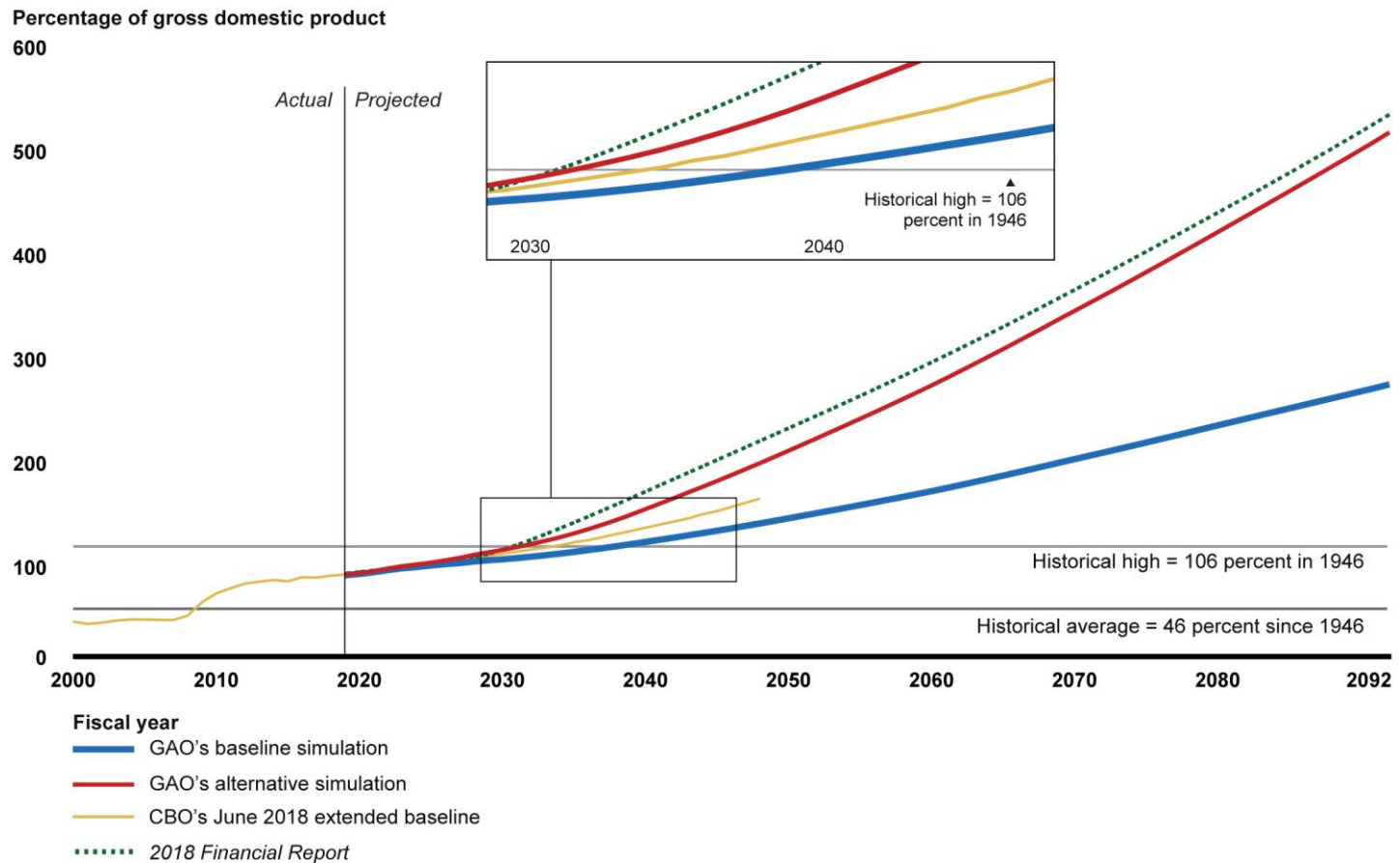
Qualitative Scenarios/ Narrative

Future of climate engineering research (2030)



GAO Studies and Longer-Term Future: The Long-Term Fiscal Crisis

Debt Held by the Public Under Projections from 3 Sources



Sources: GAO, Congressional Budget Office, and 2018 Financial Report. | GAO-19-314SP

GAO Studies and Longer-Term Future: Storage of Nuclear Waste

- Concern over long-term national strategy for safely and securely managing nation's high-level nuclear waste
- GAO used Monte Carlo simulations to develop estimated range of total costs for different storage scenarios
- Range of cost estimates for 4 scenarios (100 years, 232 years and 500 years), e.g., costs increase (\$20-97 billion by 2508) with storage disposal in permanent repository and disposal after 100 years
- Cost estimates coupled with discussion of legal, community and technical challenges likely to intensify over time

Source: NUCLEAR WASTE MANAGEMENT: Key Attributes, Challenges, and Costs for the Yucca Mountain Repository and Two Potential Alternatives (GAO-10-48)

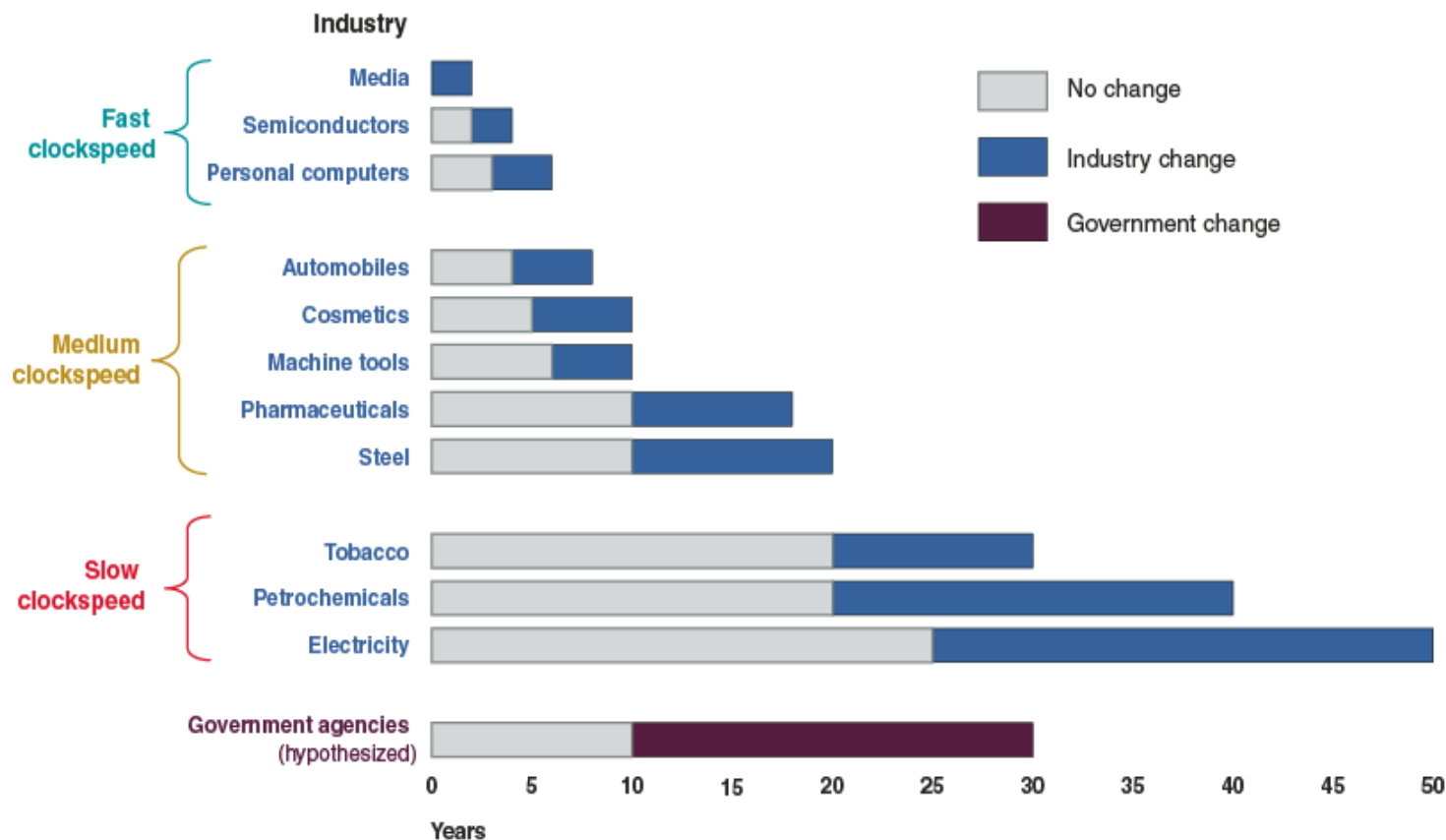
Importance of an Evidence-Based Approach

- Evidence-based policy and management bases policy decisions and selection of strategies on science and rigorous evidence rather than anecdote and unsubstantiated belief
- “Rigorous thinking (about the future) needs expertise, logic and robust evidence” (Boston, 2018)

High Clockspeed* Trends

Challenge Government and Evidence Development

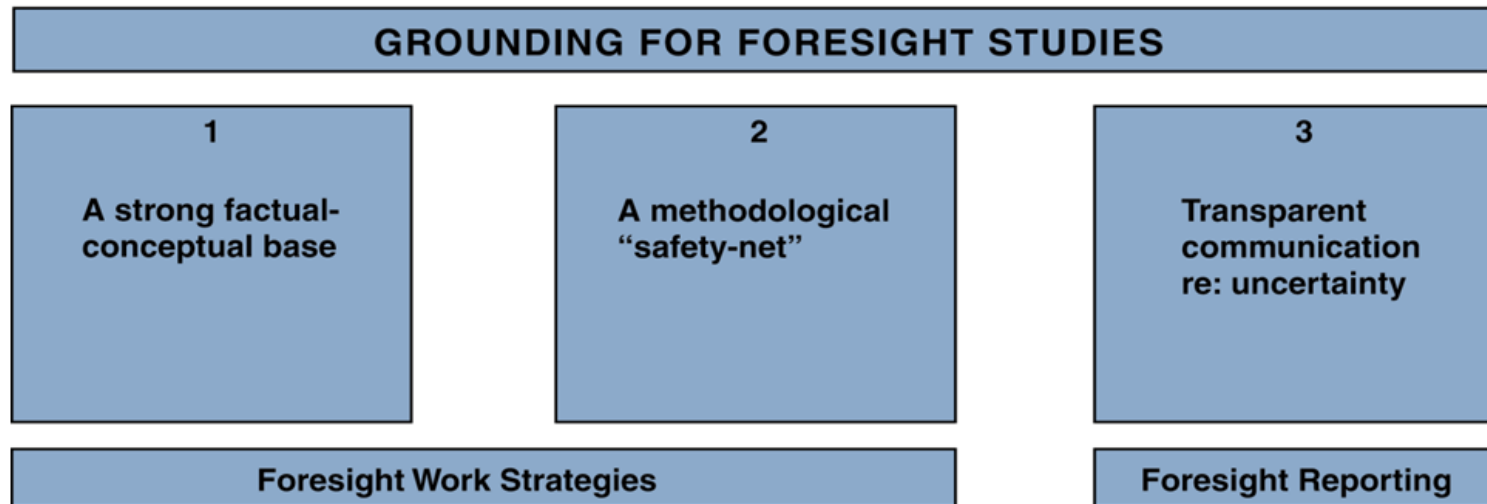
*Organizational Clockspeed (Estimated Ranges)



*Clockspeed is defined as the rate at which organizations "change processes and products, reinvent mindsets, and modify organizational structures in response to external threats or opportunities." The clockspeed concept and assessment of industry clockspeeds shown above are based on C. Fine's *Clockspeed: Winning Temporary Control in the Age of Industry Advantage*, 1998. Adapted from D. Rejeski, "S&T Challenges in the 21st Century: Strategy and Tempo," chapter. 5 in *AAAS Science and Technology Policy Yearbook*, 2003.

Reconciling Evidence and Foresight in an Accountability Organization

GAO CORE VALUES: Accountability, Integrity, Reliability



Source: Presentation by J. Kennedy on "Using 'Prospective Evaluation Synthesis' & grounded foresight to design education-related study for Congressional use," at 2014 Public Sector Foresight Network Meeting, Orlando, Florida

Implications of Trends in Citizen Engagement for Foresight and Evidence

- Field of public administration recognizes importance of
 - (1) institutionalized structures for citizen engagement
 - (2) social media tools/platforms for enabling new forms of collaboration between government and citizens
- Initiatives to encourage foresight literacy, e.g., education, government
- “Anticipatory democracy”: Combining citizen engagement with future consciousness (Bezold)
 - Impetus provided by Global Sustainable Development Goals for citizen involvement in UN-supported workshops
 - European Union includes citizens in methods to co-create research agendas
- Consideration of frameworks and attention to methods in generating evidence from citizen engagement in foresight is critical as well as innovative initiatives in foresight literacy

Climate Engineering Technology Assessment: Multiple Methods Strengthen Evidence

Climate Engineering Technology Assessment

Technology Evaluation

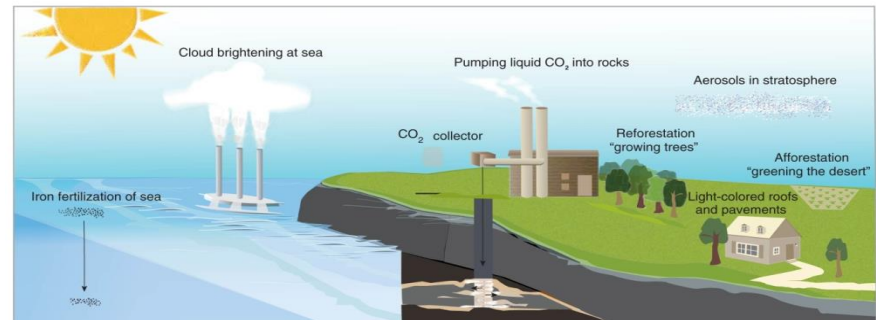
Used measures such as technology readiness level

Scenario Development

Use of scenario axis approach to create 4 scenarios (2030) varying the level of federal involvement and degree of carbon constraints

Assessment of Public Perceptions

Conducted focus groups; surveyed 1006 individuals through online research panel

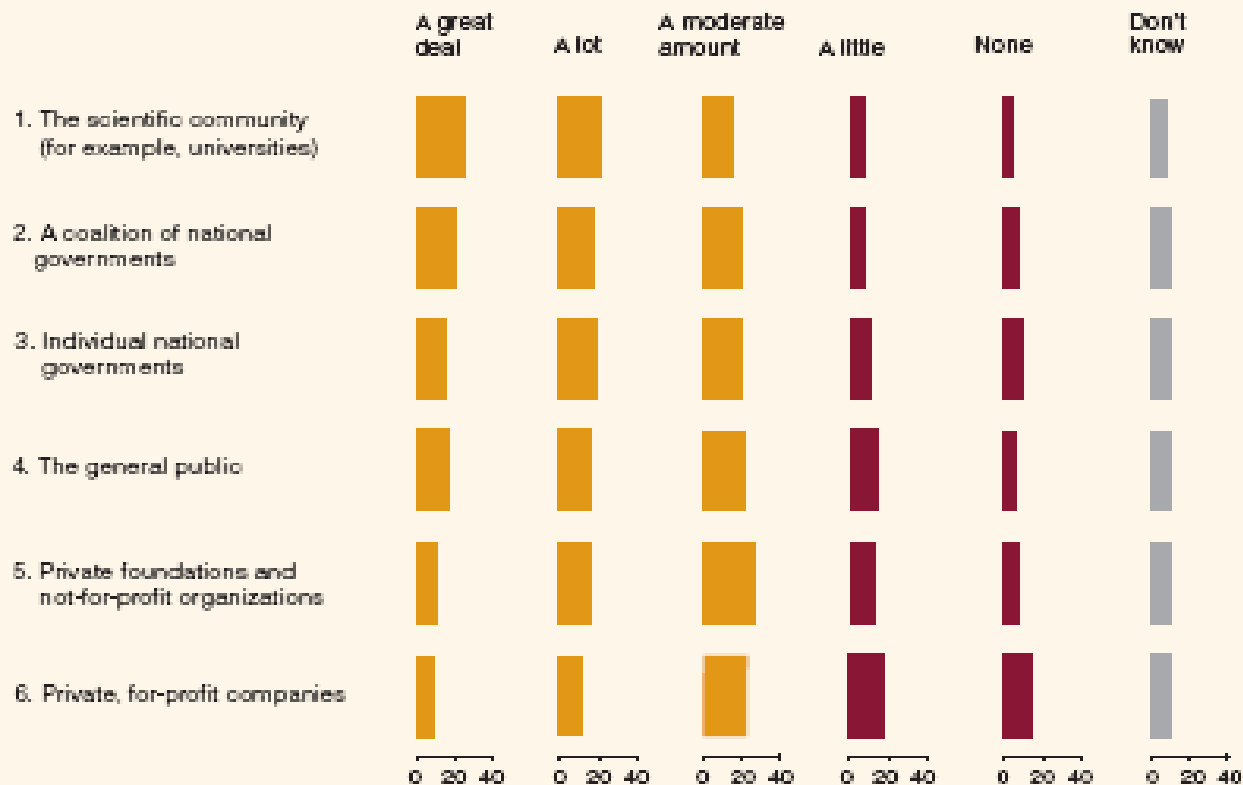


Source: TECHNOLOGY ASSESSMENT: Climate Engineering: Technical Status, Future Directions and Potential Responses (GAO-11-71)

Climate Engineering Technology Assessment: Sample Survey Question

Survey question:

How much, if any, involvement in decisions to actually use a geoengineering technology on a broad scale should each of the following groups have?



Estimated percentage of extent of involvement

Incorporating Foresight in Policy and Decision-Making

- Ongoing subject of discussion at meetings of national and international foresight networks
- Understand avenues for policy- and decision-making
- Creation of formal foresight capabilities in governments (U.S. GAO and NAFI) and internationally
- Measuring impact

Incorporating Foresight in Policy and Decision-Making

- **Conceptual or “enlightenment” use of foresight**

Provides policy and decision-makers with new ideas and frameworks that can influence how they individually and collectively approach their work; difficult to measure

- **Instrumental use of foresight**

Findings are of immediate relevance to policy and decision-makers with direct application; tracking systems can be developed

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<https://altfutures.org/public-sector-foresight-network/>