

Designing a Resilient Post–Kyoto International Climate Strategy: A Resilience Assessment of the “Hartwell Paper”

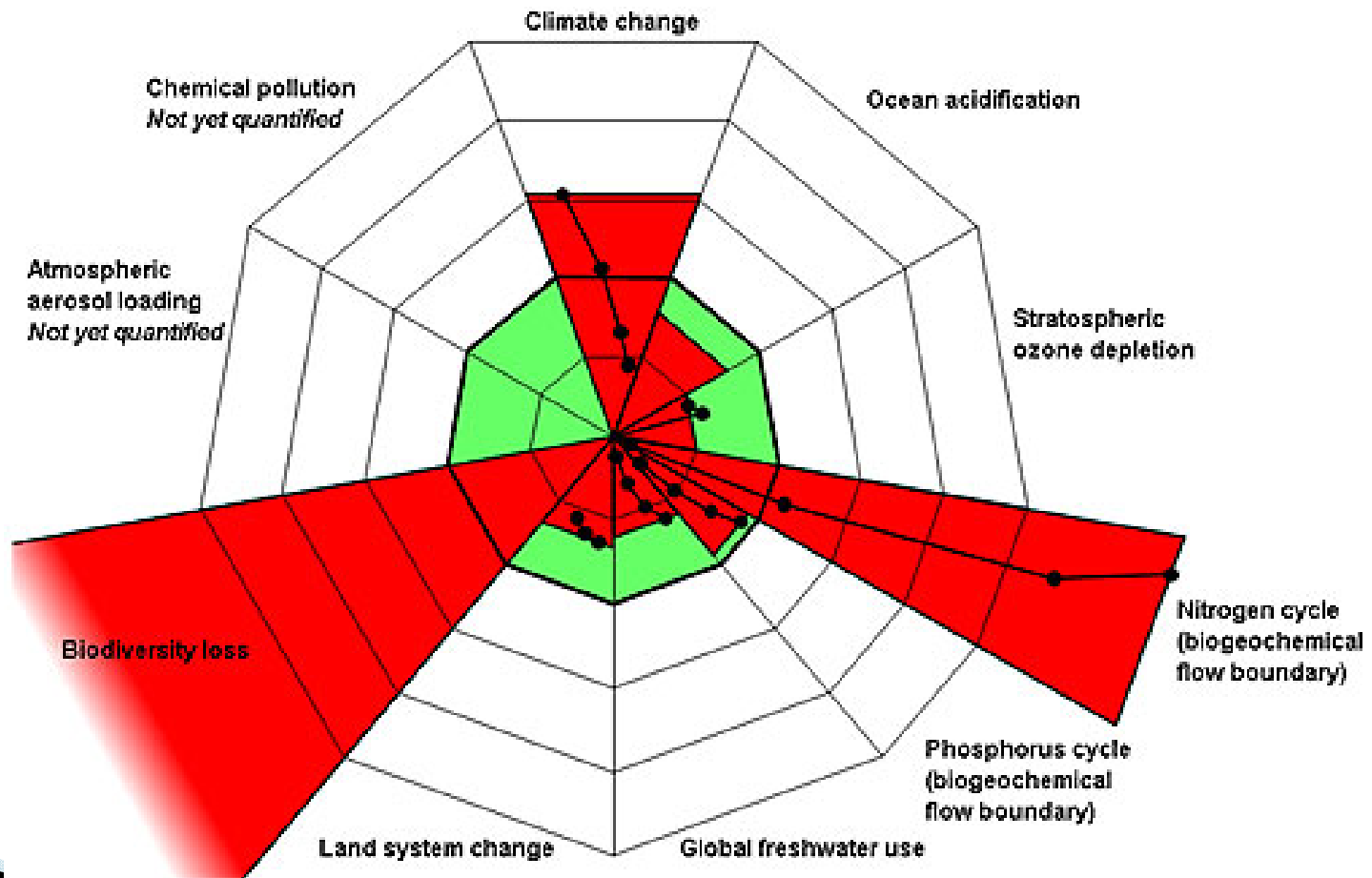
Sanford E. Gaines

Visiting Professor
Aarhus School of Business and Social Sciences

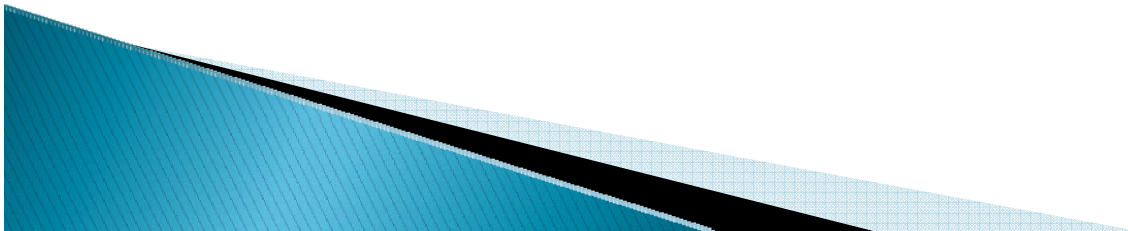
Law for Social–Ecological Resilience
Stockholm University
17–19 November 2010

Premises

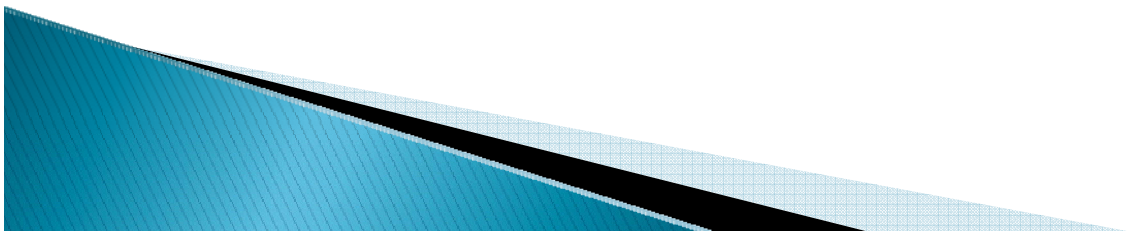
1. Climate change threatens to exceed a planetary boundary (or 2 or 3) See Rockström et al.(Stockholm Resilience Center), 2009



- ▶ 2. Climate change is a global challenge requiring a response at the global scale—as part of a ‘polycentric approach’
 - On polycentric approach, see Elinor Ostrom, World Bank Policy Research Working Paper (2009)

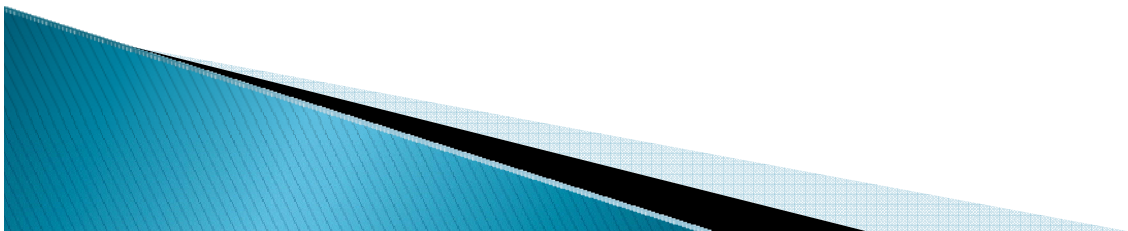


- ▶ 3. The current global response—UNFCCC and Kyoto Protocol—is not adequate
 - EU Commission, Energy 2020 (communication of 10.11.2010)
 - "...the existing strategy . . . is wholly inadequate to the longer term challenges"
 - Ostrom:
 - "Waiting for a single worldwide 'solution' to emerge from global negotiations is also problematic."



Approach

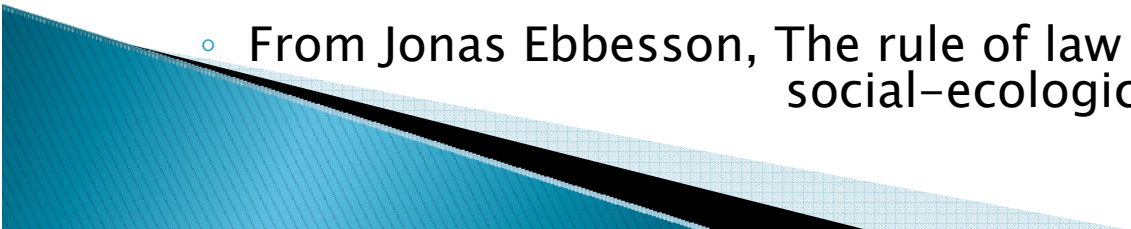
- ▶ 1. Social–ecological resilience theory—salient concepts relevant to climate governance
- ▶ 2. The Kyoto Protocol and resilience theory
- ▶ 3. The Hartwell Paper proposals
- ▶ 4. The Hartwell Paper evaluated in terms of resilience theory



Salient Social Elements in Resilience Theory

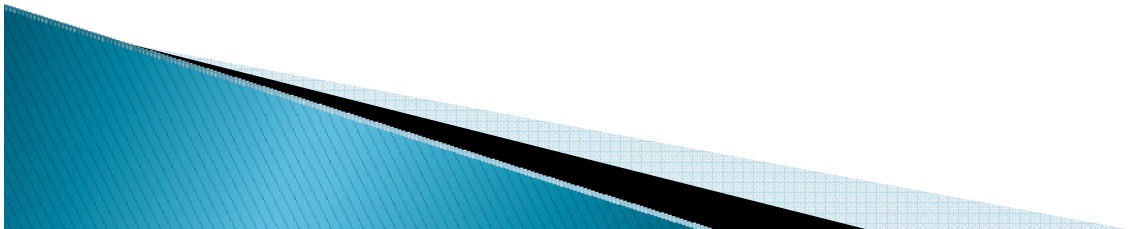
- ▶ **Flexibility** in social systems and institutions
- ▶ **Openness** of institutions – participation
 - Significance of local decision making
- ▶ **Effectiveness** of multilevel governance
- ▶ **Adaptability** and promotion of learning
 - Social structures that do not limit options
- ▶ **Overall:** "...strengthening the ability to deal with uncertainties and surprises, rather than attempting to control nature, maintain once and for all a given social or ecological situation or counter any change."

◦ From Jonas Ebbesson, *The rule of law in governance of complex social-ecological changes* (2010)



Adaptive governance

- ▶ "Transformability" into improved systems
- ▶ "An adaptive governance framework relies critically on the collaboration of a diverse set of stakeholders operating at different social and ecological scales in multi-level institutions and organizations."
 - C. Folke 2006



Analyzing sustainability of social–ecological systems

- ▶ Background settings– economic development, demography, government policy, etc.
- ▶ Major systems: Resources, resource units, governance, users (and their interactions and outcomes)
 - Second–level variables under each system
 - E.g., under governance: government orgs.; NGOs; networks; property rights; constitutional rules; monitoring and sanctioning
 - ”...long–term sustainability depends on rules matching the attributes of the resource system, resource units, and users.”

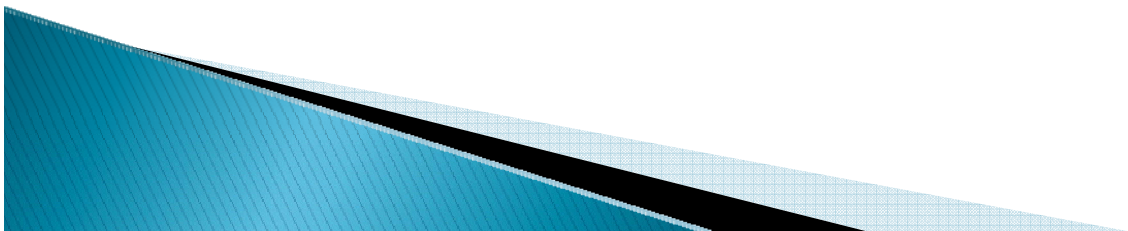
Elinor Ostrom, *Science*, 24.7.09



The Kyoto Protocol & Resilience

- ▶ Relatively inflexible
 - Quantitative emissions reduction targets by specified time period
 - Rather strict rules on non-reduction approaches (JI, CDM, LULUCF)
- ▶ Closed decision making
 - Binding decisions by government representatives.
- ▶ Two-level governance structure
 - International obligations through UNFCCC/KP only
 - National implementation
- ▶ Long-term goal setting preferred over frequent adaptation based on learning

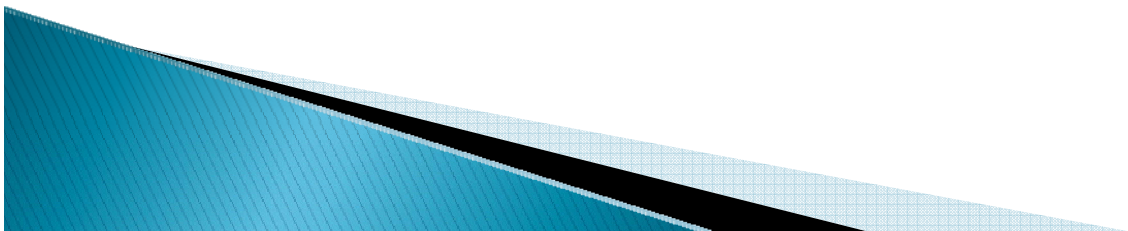
- ▶ Is KP a case of a "rigid control mechanism() [that] can erode resilience and promote collapse" ??(Folke et al. 2002)



The Hartwell Paper (May 2010)

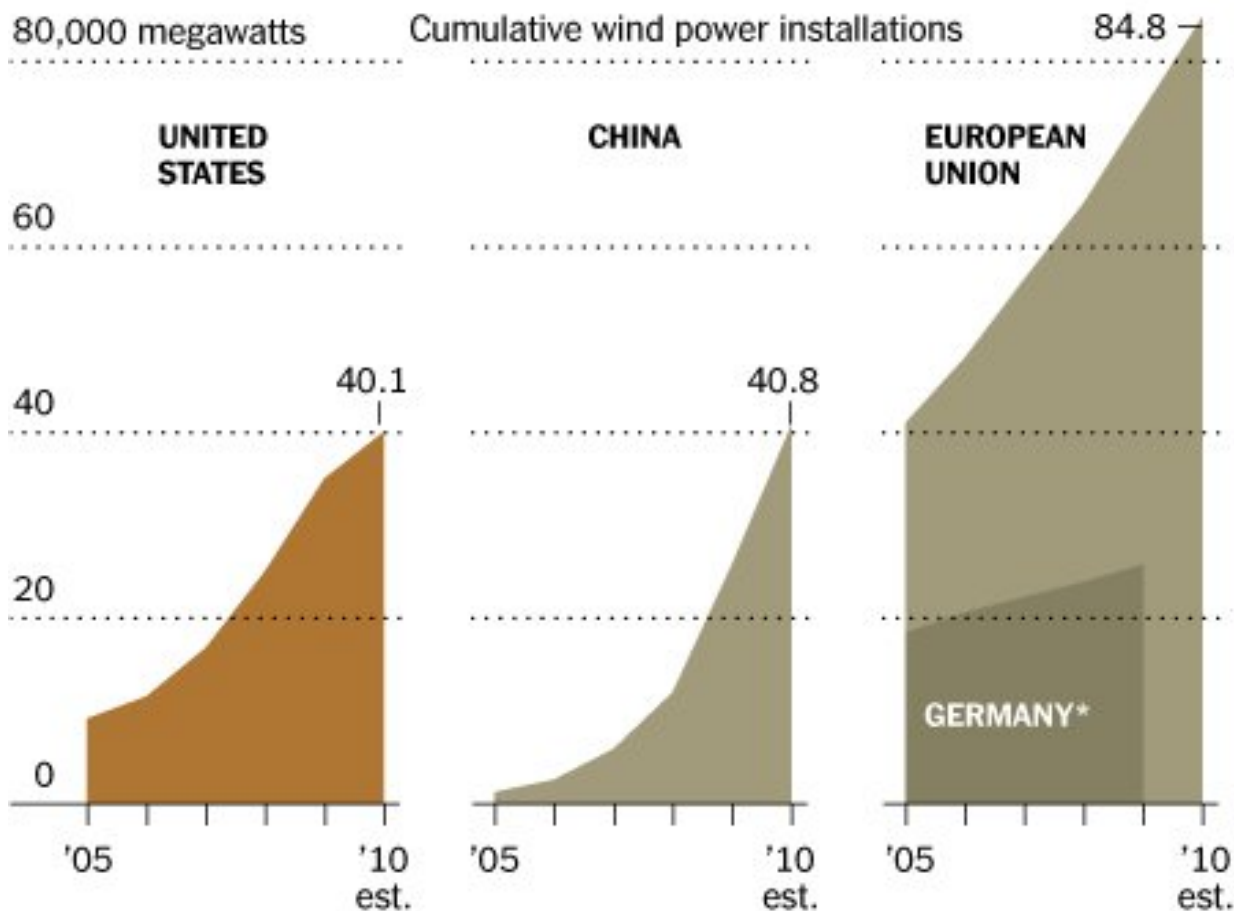
- ▶ The Kyoto Protocol is not working

”The course that climate policy has been pursuing for more than a decade is no longer sustainable—climate policy must find a new way forward.”



Falling Behind

A weak economy and abundant supplies of energy from inexpensive fossil fuels have caused the investment in wind energy generation in the United States to fall behind that of Europe and China.

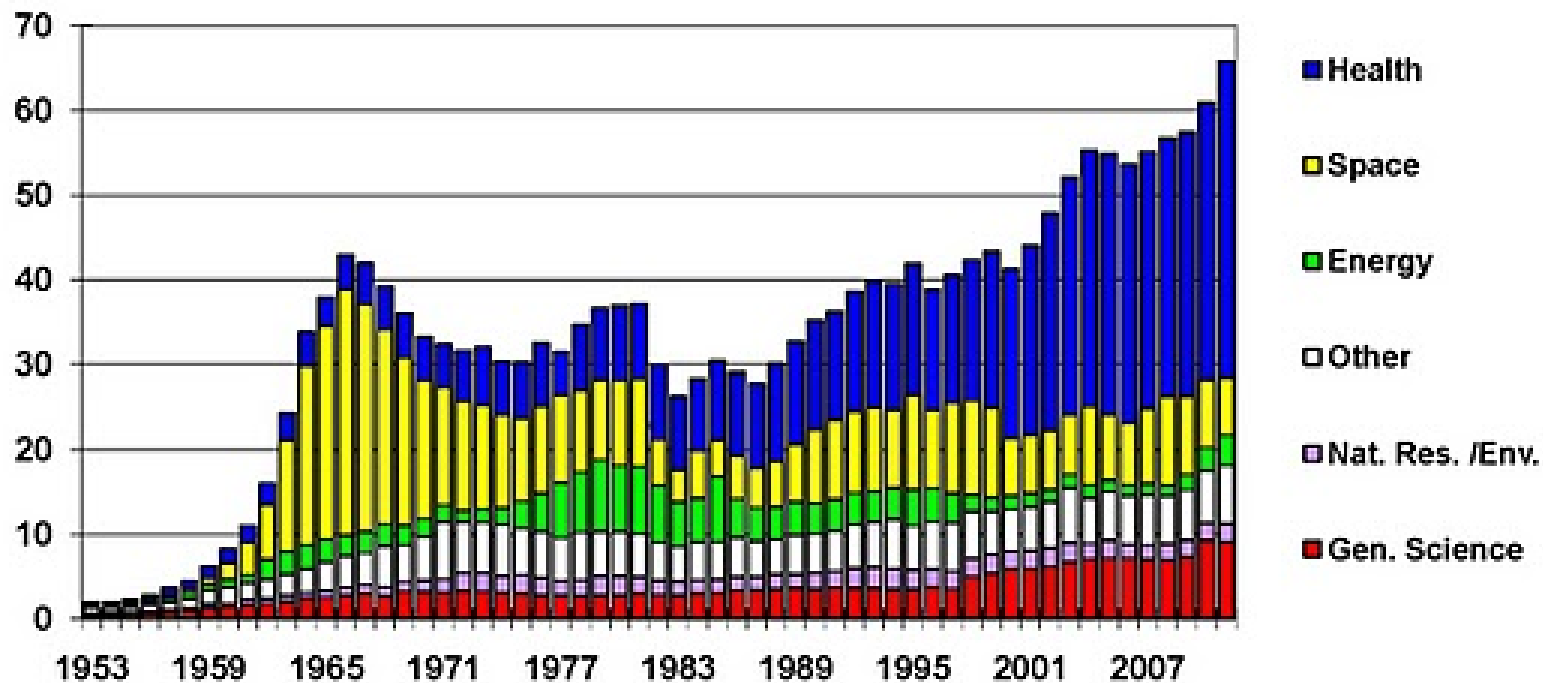


*Estimate unavailable for 2010.

Source: American Wind Energy Association

Trends in Nondefense R&D by Function, FY 1953-2011

outlays for the conduct of R&D, billions of constant FY 2010 dollars

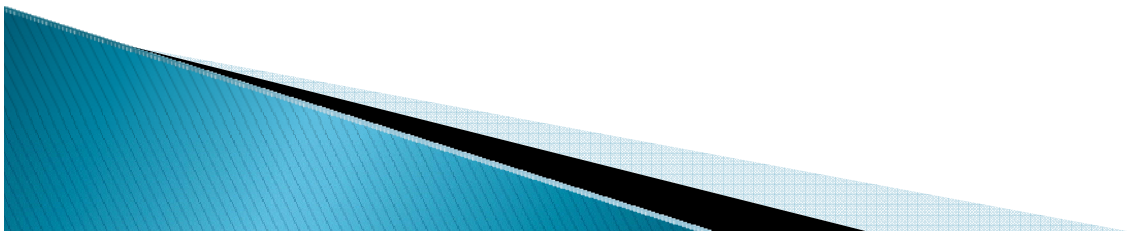


Conduct of R&D excludes R&D facilities and capital equipment. Outlays include allocations of Recovery Act dollars. Note: Some Energy programs shifted to General Science beginning in FY 1998.

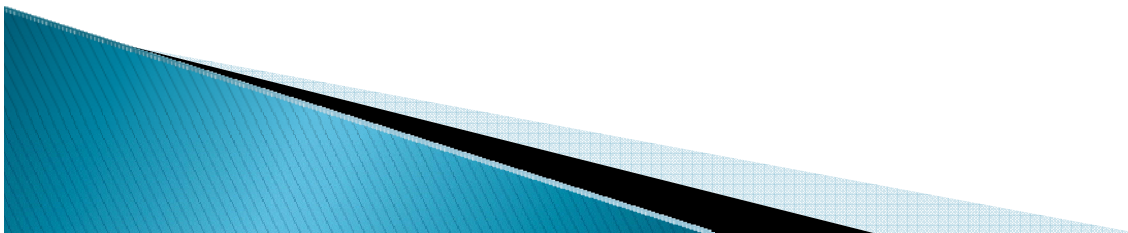
FEB. '10 OSTP

The Hartwell Paper proposals

- ▶ Governing principle: "the raising up of human dignity"
- ▶ 3 "overarching" objectives:
 - Ensuring energy access for all—requires alternatives to fossil fuels
 - Ensuring viable environments protected from various forcings—see short-term initiatives
 - Ensuring that societies can live and cope with climate risks of all types—adaptation
- ▶ Mitigation goal
 - Reducing energy intensity of economies and carbon intensity of energy
- ▶ Mitigation strategy
 - intensive R, D, D & D on low-cost noncarbon energy systems, supported in part by dedicated carbon tax



- ▶ Short-term initiatives to rebuild political support, focused on viable environments
 1. Eradicate emissions of black carbon
 2. Reduce tropospheric ozone
 3. Manage forests for integrated ecosystem values (decoupled from UNFCCC)



Hartwell Paper and resilience theory

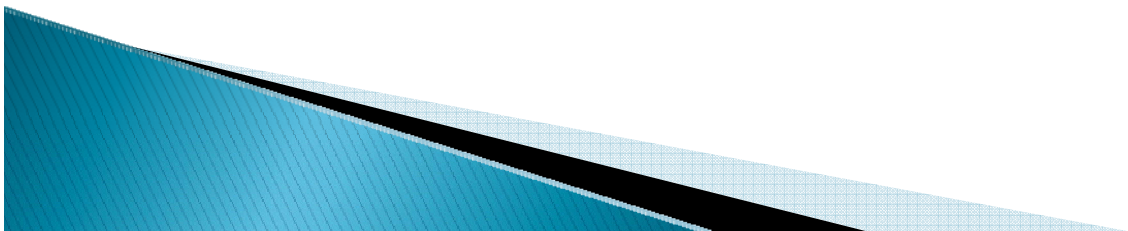
▶ Flexibility

- No fixed end point
 - Climate change a superwicked problem
 - Multiple goals, benefits of strategies
 - Independent of viewpoints about climate change
- Non-compulsory
 - Different groups, countries can play different roles



▶ Openness

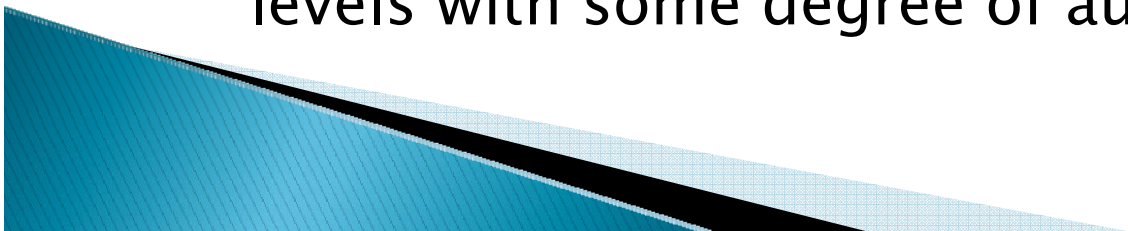
- Many different groups and organizations can participate in research design, technology deployment
 - Scope for independent academics
 - Scope for venture capitalists, industrial entrepreneurs
- Some process—presumably public and open—needed for setting and re-setting interim research objectives for publicly-funded research



▶ Effectiveness of multilevel governance

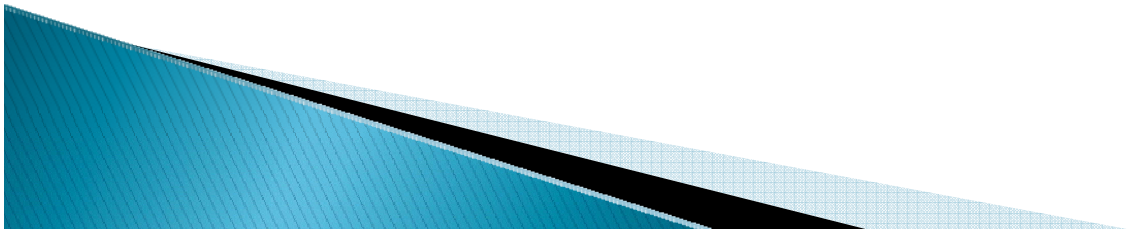
- No or very little top–down direction
 - "Clumsy" approaches*
- Opportunity for international, regional, national research programs, with some mechanisms for coordination**
- Potential opportunities for diverse choices among energy technologies for decarbonization

- *Verweij & Thompson (2006); cf. Folke et al. (2002): "messy and non–hierarchical in structure" approaches.
- ** Folke et al. (2002) "dynamic efficiency is frequently ... enhanced" by governance at multiple levels with some degree of autonomy."



▶ Adaptability and learning

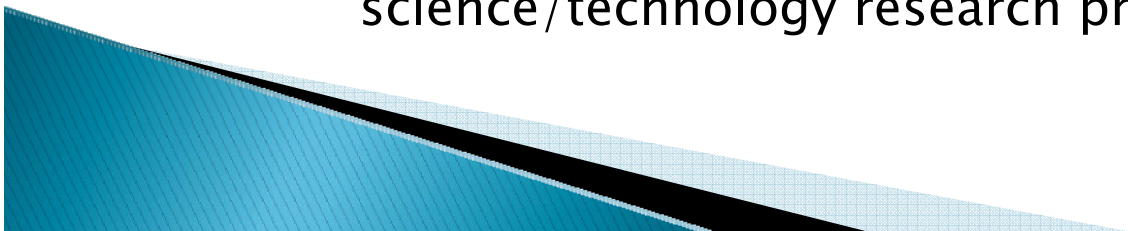
- Emphasis on continuous innovations in energy systems
 - Mobilization of diverse "users"
 - Incentives for collaboration
- Trial-and-error experimentation with different technologies



Conclusions

Hartwell Paper approach scores well in terms of social-ecological resilience

- **A key advantage:**
 - Sidesteps the political stalemate surrounding Kyoto and the troubled politics and administration of emissions trading, CDM, etc.
- **2 key questions:**
 - Building trust approaches:
 - Will developed country governments immediately fund programs to address black carbon, ozone, forests?
 - Long-term R,D,D & D:
 - Will deficit-obsessed developed country politics allow a major new tax and a major new publicly-financed science/technology research program?



Closing thought

The dogmas of the quiet past are inadequate to the stormy present. The occasion is piled high with difficulty, and we must rise with the occasion. As our case is new, so we must think anew, and act anew. We must disenthrall ourselves, and then we shall save our [world].

President Abraham Lincoln, second annual message to Congress, 1 Dec. 1862.

