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In the Obama Administration, how can SDR better engage other NSTC bodies (e.g., USGCRP, USGEO) to facilitate interagency coordination addressing societally relevant issues, such as climate change & adaptation?

Overview:

Recent NRC Studies-

USGCRP Report-

OSTP-

International-

(1) UNFCCC

(2) Second Session, Global Platform

(3) IPCC Extreme Events Special Paper

What are next steps for SDR?

INFORMING DECISIONS IN A CHANGING CLIMATE (2009)
NATIONAL RESEARCH COUNCIL *OF THE NATIONAL ACADEMIES*
www.nap.edu

p.106 - Adaptation Contexts and Capacities

Adaptation to climate change is the result of how regions, sectors, populations, and their governing institutions cope with their vulnerabilities (Adger et al., 2007).

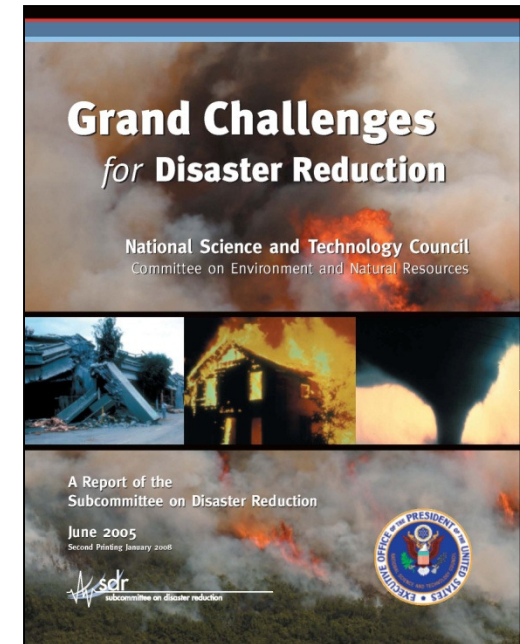
Adaptation strategies take place in and across multiple sectors and span a range of time periods, from long-range efforts, such as strengthening protections against riverine and coastal flooding and controlling development in areas prone to sea-level rise; through preparatory activity, such as planning and mobilizing resources to respond to extreme climate-related events; to planning and carrying out recovery activities following such events. Adaptation also involves the development of early warning systems for climate-related societal effects. The list of phenomena for which early warning systems are needed is a long one that includes disease outbreaks, drought, wildfire, landslides, famine and famine-induced migration, and potential conflicts over resources.

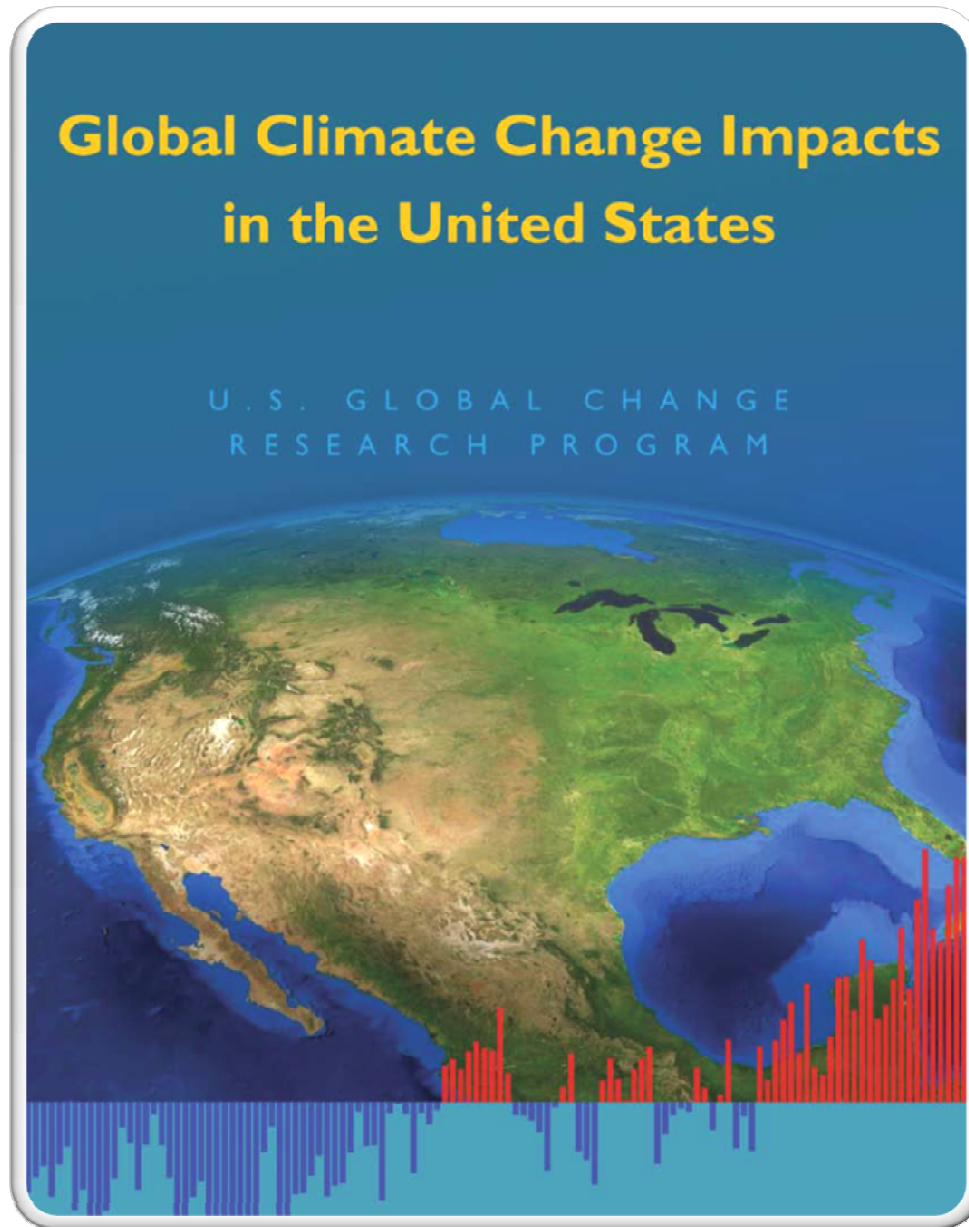
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p.25 - *Climate Change and Drought*

“A recent report of the Subcommittee on Disaster Reduction of the National Science and Technology Council (2005), *Grand Challenges for Disaster Reduction*, found that among all natural hazards, droughts are the leading cause of economic losses, accounting for average annual losses of \$6–\$8 billion and affecting more U.S. residents than any other natural hazard. The report called for “a national instrument system capable of collecting climate and hydrologic data to ensure drought can be identified spatially and temporally” and “an integrated modeling framework to quantify predictions of drought and drought impacts useful in decision-making” (Subcommittee on Disaster Reduction, 2005:14). Such an instrument would necessarily support decisions about local, state, and regional responses to one key manifestation of climate change.”





<http://www.globalchange.gov/>

p.11:

- Adaptation refers to changes made to better respond to present or future climatic and other environmental conditions, thereby reducing harm or taking advantage of opportunity.
- Effective mitigation measures reduce the need for adaptation.
- Mitigation and adaptation are both essential parts of a comprehensive climate change response strategy.

Released June 16, 2009

USGCRP Report (cont'd) - EXTREME EVENTS

p.47-48

Finally, this report identifies a number of areas in which inadequate information or understanding hampers our ability to estimate future climate change and its impacts. For example, our knowledge of changes in tornadoes, hail, and ice storms is quite limited, making it difficult to know if and how such events have changed as climate has warmed, and how they might change in the future. Research on ecological responses to climate change is also limited, as is our understanding of social responses.

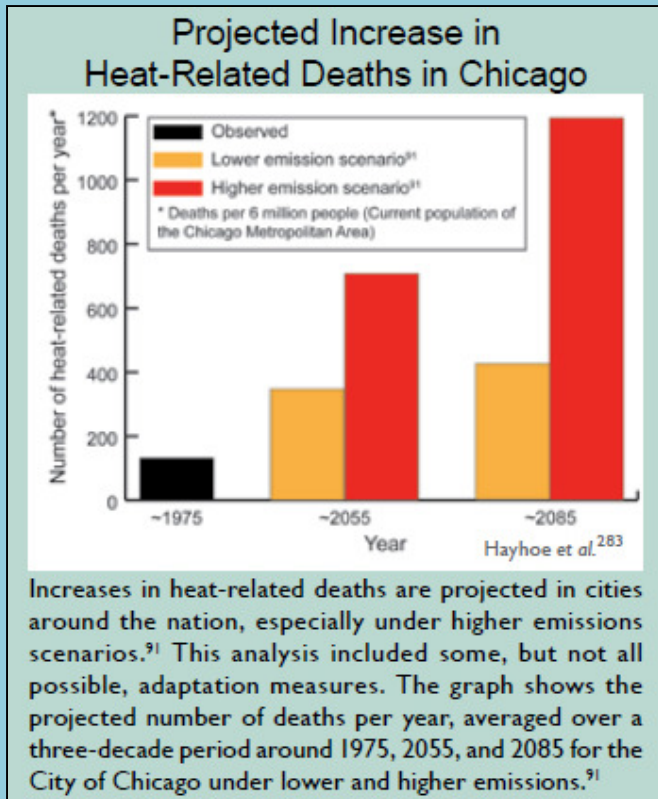
Adapting to gradual changes, such as changes in average amounts of precipitation, is less difficult than adapting to changes in extremes. Where extreme events, such as droughts or floods, become more intense or more frequent with climate change, the economic and social costs of these events will increase.

USGCRP Report (cont'd) - ADAPTATION

p.61

- The strategic examination of national, regional, state, and local networks is an important step toward understanding the risks posed by climate change.
- A range of adaptation responses can be employed to reduce risks through redesign or relocation of infrastructure, increased redundancy of critical services, and operational improvements.
- Adapting to climate change is an evolutionary process.
- Through adoption of longer planning horizons, risk management, and adaptive responses, vulnerable transportation infrastructure can be made more resilient.

USGCRP Report (cont'd) - HUMAN HEALTH LINKAGES



p.90-91:

The full effect of global warming on heat-related illness and death involves a number of factors including actual changes in temperature (averages, highs, and lows); and human population characteristics, such as age, wealth, and fitness. In addition, adaptation at the scale of a city includes options such as heat wave early warning systems, urban design to reduce heat loads, and enhanced services during heat waves.

USGCRP Report (cont'd) - SOCIETY

p.104 - Insurance is one of the industries particularly vulnerable to increasing extreme weather events such as severe storms, but it can also help society manage the risks. Insurance – the world’s largest industry – is one of the primary mechanisms through which the costs of climate change are distributed across society. Most of the climate change impacts described in this report have economic consequences. A significant portion of these flow through public and private insurance markets, which essentially aggregate and distribute society’s risk. Insurance thus provides a window into the myriad ways in which the costs of climate change will manifest, and serves as a form of economic adaptation and a messenger of these impacts through the terms and price signals it sends its customers.

USGCRP Report (cont'd)

p.98 - The United States has considerable capacity to adapt to climate change, but during recent extreme weather and climate events, actual practices have not always protected people and property.

Vulnerability to extreme events is highly variable, with disadvantaged groups and communities (such as the poor, infirm, and elderly) experiencing considerable damage and disruptions to their lives.

Adaptation tends to be reactive, unevenly distributed, and focused on coping rather than preventing problems.

p.99 - Unequal adaptive capacity in the world as a whole also will pose challenges to the United States. Poorer countries are projected to be disproportionately affected by the impacts of climate change and the United States is strongly connected to the world beyond its borders through markets, trade, investments, shared resources, migrating species, health, travel and tourism, environmental refugees (those fleeing deteriorating environmental conditions), and security.

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The Role of Agriculture and Forestry in Global Warming Legislation

Wednesday, July 22 2009, 10:00am - 5:00pm

U.S. Senate Committee on Agriculture, Nutrition & Forestry

**(Excerpted from Written Statement of Dr. John P. Holdren,
Director, Office of Science and Technology Policy):**

Vulnerability and adaptation of farms and forests under climate change

“Although it is still the case today that climate change has benefitted farms and forests in some places while harming them in others, and this mixed pattern may persist for some years more, there can be little doubt that the far larger temperature increases expected by 2030 and beyond on the “business as usual” trajectory would put substantial stresses on farms and forests in most places. Such stresses can be alleviated to some extent by adaptation efforts of a variety of kinds, of course, including development of heat-, drought, and pest/pathogen-resistant crop strains and more efficient water management schemes for agriculture. We absolutely need to make well focused and effective investments in such measures.

But adaptation becomes more difficult, more costly, and less effective the larger are the changes in climate to which one is trying to adapt. The need to restrain climate change to a level with which affordable adaptation measures can plausibly cope is what has led so many analysts of this problem to conclude that every effort should be made to avoid exceeding a global average temperature increase of 3.6 degrees F (2°C). I note that President Obama’s stated target for U.S. reductions in emissions of heat-trapping gases to 83% below 2005 emissions by 2050 is consistent with that aim, assuming that other industrialized countries perform similarly and that developing countries transition to declining emissions trajectories no more than a decade after the industrialized nations do. “

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Climate Services: Solutions from Commerce to Communities

Thursday, July 30, 2009 02:30 PM

U.S. Senate Committee on Commerce, Science, and Transportation

**(Excerpted from Written Statement of Dr. John P. Holdren,
Director, Office of Science and Technology Policy):**

“It is important for the USGCRP to make a strong commitment to providing the information that society is seeking in order to reduce vulnerabilities and improve resilience to variability and change. For example, a recent National Research Council report recommends restructuring the USGCRP around “...the end-to-end climate change problem, from understanding causes and processes to supporting actions needed to cope with the impending societal problems of climate change.”¹ This will require the USGCRP to support a balanced portfolio of fundamental and application-oriented research activities from expanded modeling efforts to studies of coupled human-natural systems and institutional resilience...”

“...In addition, it would mean boosting adaptation research; bolstering capacity to monitor change and its impacts (including not only enhancing our monitoring networks on land and for the oceans but also strengthening our system of Earth-observation satellites)...”

¹ National Research Council, 2009. *Restructuring Federal Climate Research to Meet the Challenges of Climate Change*. National Academy Press, Washington DC.

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Climate Services: Solutions from Commerce to Communities

Thursday, July 30, 2009 02:30 PM

U.S. Senate Committee on Commerce, Science, and Transportation

(Excerpt from Written Statement of Dr. John P. Holdren, Director, Office of Science and Technology Policy):

“As noted by the USGCRP Global Climate Change Impacts report, informed choices about adaptation will need to be made at many scales of human activity, from an individual farmer switching to growing a different crop variety better suited to warmer or drier conditions, to a company relocating key business centers away from coastal areas vulnerable to sea-level rise and hurricanes, to a community altering its zoning and building codes to place fewer structures in harm’s way and making buildings less vulnerable to damage from floods, fires, and other extreme events.

When we do all that we ought to do in the way of both mitigation and adaptation, we will benefit not only by avoiding the worst damages from climate change, but also by reducing our overdependence on petroleum, continuing to improve air quality in our cities, preserving our forests as havens for biodiversity and sources of sustainable livelihoods, reducing our vulnerability to the extreme weather events that occur from time to time even when climate is not changing overall, and generating new businesses, new jobs, and new growth in the course of getting it all done. “

Climate Services: Solutions from Commerce to Communities

Thursday, July 30, 2009 02:30 PM

U.S. Senate Committee on Commerce, Science, and Transportation

**(Excerpted from Written Statement of Dr. John P. Holdren,
Director, Office of Science and Technology Policy):**

“Three areas of particular need for more comprehensive and coordinated treatment from USGCRP are adaptation research, integrated assessment, and climate services.”

Adaptation research

*“There currently exists limited knowledge about the ability of communities, regions, and sectors to adapt to a changing climate. To address this shortfall, research on climate change impacts and adaptation must include complex human dimensions, such as economics, management, governance, behavior, and equity. Interdisciplinary research on adaptation that takes into account the interconnectedness of the Earth system and the complex nature of the social, political, and economic environment in which adaptation decisions must be made would be central to this effort. **Given the relationships between climate change and extreme events, the community of researchers, engineers and other experts who work on reducing risks from natural and human-caused disasters will have an important role to play in framing climate change adaptation strategies and in providing information to support decision-making during implementation. For example, assessments of emergency preparedness and response systems, insurance systems, and disaster-relief capabilities are an important component of a society’s adaptive capacity.”***

INTERNATIONAL

The United Nations Framework Convention on Climate Change

http://unfccc.int/adaptation/sbsta_agenda_item_adaptation/items/3952.php

“Climate related risks are created by a range of hazards. Some are slow in their onset (such as changes in temperature and precipitation leading to droughts, or agricultural losses), while others happen more suddenly (such as tropical storms and floods). It is now widely recognised that climate-related impacts are not just a future threat. Furthermore, past and current experiences in dealing with climate variability and extreme events, irrespective of attribution to climate change, hold valuable lessons for reducing vulnerability and enhancing resilience for future climate-related adverse impacts.

A strong body of experience in dealing with climate-related risks already exists in the disaster risk reduction community. Also, the global disaster management community, as well as sectoral communities, are increasingly focusing their efforts on building resilience into investments and development. However, gaps in knowledge still exist and, therefore, activities under this area of work are undertaken in line with the objective of promoting understanding of impacts of, and vulnerability to, climate change, current and future climate variability and extreme events, and the implications for sustainable development.”

INTERNATIONAL

Second Session of the Global Platform for Disaster Risk Reduction

The meeting took place at the Centre International de Conférences de Genève (CICG), Geneva, Switzerland from Tuesday to Friday, 16-19 June 2009.

Excerpt from the Chair's Summary:

The overwhelming view of the Global Platform is that urgent action is required to harmonise and link the frameworks and policies for disaster risk reduction and climate change adaptation, and to do so within the broader context of poverty reduction and sustainable development. A priority is to incorporate both disaster risk reduction and climate change adaptation as core policy and programmatic objectives in national development plans and supporting poverty reduction strategies and country assistance plans. Better preparedness for the humanitarian consequences of climate change is needed, including through early warning systems and local level adaptation. It was stressed that disaster risk reduction must be a concrete part of the deal on climate change that is sealed at the United Nations Climate Conference in Copenhagen in December 2009.

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INTERNATIONAL

Intergovernmental Panel on Climate Change

<http://www.ipcc-wg2.gov/AR5/sr.html>

Current Special Reports Led by Working Group II

[Special Report: Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation](#)

At the 29th session of the Panel (31 August - 4 September 2008 • Geneva, Switzerland), Norway introduced a proposal, prepared in collaboration with the UN International Strategy for Disaster Reduction (ISDR), for a Special Report on extreme events and disasters, with an emphasis on risk management.

At the 38th session of the IPCC Bureau (24-25 November 2008 • Geneva, Switzerland), [a revised proposal \(72KB\)](#) was presented.

[A Scoping Paper](#) describing process and objectives, and providing an annotated outline of the proposed Special Report, was distributed in advance of the 39th session of the Bureau and the following 30th session of the IPCC (20-23 April 2009 • Antalya, Turkey).

The document was discussed at length at the Bureau and Panel sessions, and a decision (see [press release, 32KB](#)) was taken on 23 April 2009 to prepare the Special Report, following IPCC procedures and with the involvement of ISDR. It was further decided that Working Group II oversee preparation of the assessment.

SDR – What are the next steps?

What are the common threads among these recent documents & activities?

What are the opportunities for SDR?

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- (1) what mechanisms/processes are in place to communicate (both gather and disseminate) information re: disasters/hazards to meet local & regional demands?
 - (2) how might these demands change over time as a result of a changing climate?
 - (3) what is needed (e.g., from collaboration with USGCRP, USGEO) to meet these changing demands?

Basis:

The need to (a) characterize risk/vulnerability (b) communicate information pertaining to risk/vulnerability, and (c) transform this information into resilience, are essential to adaptation strategies. Given this context, the SDR is well positioned to work collaboratively with USGCRP and USGEO in identifying existing or needed activities/capabilities to foster more resilient communities in the face of potential impacts from a changing climate.

Are these (above) the right questions to address?