

# ENVISIONING THE FUTURE OF COASTAL MANAGEMENT

## STAKEHOLDER DISCUSSION SUMMARY BY TOPIC: CLIMATE CHANGE AND HAZARDS

### TOPIC SUMMARY

Climate change and hazards were discussed at all five stakeholders meetings, in a total of nine breakout sessions. In San Francisco, Boston, and Chicago, climate change and hazards were discussed in the same breakout groups while in Atlanta and Hawaii, the topics were separated. From the nine total breakout groups the following themes appeared consistently:

*More coordination is needed* - Efforts to mitigate and adapt to climate change and coastal hazards in coastal and shoreline areas are fragmented. The lack of coordination results in inefficient allocation of resources, gaps in data and technical information, and inadequate or inappropriate planning efforts. Better coordination is needed among agencies, governments, the private sector, academia, and the public.

*More data is needed.* - There is much uncertainty about regional and local impacts of climate change and hazards on both human and ecological resources. General need for basic research on impacts, causes, and options for addressing climate change and hazards. Insufficient maps and tools are available to local and regional stakeholders to help them plan for climate change and hazards.

*More incentives are needed.* - Current efforts to address climate change and hazards are insufficient. The CZMA and federal, state, and local government policies do not offer effective incentives for stakeholders at all levels to take actions to address climate change and hazards.

*Improved communication strategies are needed.* – The public, decision-makers, and political leaders are not motivated to address climate change and hazards issues. There is a disconnect between the large body of scientific and technical literature on climate and hazards and the understanding of the general public.

### OBSTACLES

#### *Education and Values*

- Differing priorities and perceptions about the “common good” versus private property and individual rights
- Lack of political will to address climate change and hazards threats
- Many people, including members of the public, decision-makers, and prospective land buyers, don’t fully understand causes, impacts, risks, and options for addressing climate change and hazards
- Scientific and best practices information are not communicated effectively to the public and decision-makers

#### *Incentives*

- Infrequency of hazards and willingness of governments to provide post-incident financial support are disincentives to consider hazards in local decision-making

- The current CZMA includes contradictory mandates: environmental protection and redevelopment of coastal areas
- Insurance requirements are disincentives

#### *Land Use and Ownership*

- Multiple owners control activities along coasts and shorelines, each with potentially different interests and priorities
- Multiple jurisdictions

#### *Data and Mapping*

- Scientific complexity and some uncertainty about climate change and its impacts
- Lack of research on impacts to specific geographic areas and ecosystems; including shorelines, islands, and regions (not just local areas)
- Maps are outdated and not sufficiently detailed
- More oceanographic, atmospheric, bathymetric, and other geophysical data are needed

#### *Multiple Approaches*

- Mitigation, adaptation, and prevention are all viable options, however there is no consensus on where to focus or which approach to adopt
- There is a disconnect in enforcement
- Lack of a unifying program to promote interagency work

#### *Complexity of Issues and Impacts*

- Global problem, but impacts felt locally
- One size fits all policies are not always appropriate
- Uncertainty - we don't fully understand all of the problems and impacts
- Human and non-human impacts (eco-system); how to prioritize and address them
- Cumulative effects on habitats and ecosystems, many which are not yet known
- Time scale is long and difficult to comprehend

### **PARTICIPANT GENERATED SOLUTIONS**

#### *Mapping and Data Collection*

- Mandate and fund the development of regional and local data models that predict hazards or changes that must be planned for coastal states and communities.
- Mandate and fund the development of visualization tools that illustrate predicted sea-level rise, erosion, land changes.
- Map probabilities of hazards and climate change impacts.
- Develop an index for measuring the resilience of a community to natural and manmade hazards and climate change impacts.
- Develop valuation models for ecosystem resources and climate change and hazards risks and impacts.

#### *Climate Change and Hazards Planning*

- Through CZMA, require coastal states to address climate change and hazards risks and potential impacts in their CZM plans. Make funding contingent on completion of climate change and hazards planning.
- Authorize funding for technical assistance, data collection and analysis, and planning assistance for local, state, and regional efforts to address climate change and hazards.

### *Intergovernmental/ Interagency Collaborative Efforts*

- Expand coastal zone management to encompass all programs related to coasts, including the Federal Highway Administration and State Departments of transportation.
- Include a mandate in the CZMA for some entity to lead federal agencies in coordinating their activities and policies in the coastal zone, including funding and programmatic initiatives.
- Coordinate and strengthen regulatory incentives such as Clean Water Act Section 404.
- Collaborate with federal programs, such as the national flood insurance program, and require state compliance with federal regulations as a requirement for CZMA funds.
- Encourage development of regional coastal and shoreline management plans.

### *Public-Private Collaborative Efforts*

- Work with private sector stakeholders (such as insurance companies) to identify areas at high risk of impact from coastal hazards.
- Consult with the private sector to develop building codes and other government policies that will result in mutually beneficial risk reductions.
- Require insurance in order to receive post hazard federal recovery funding.

### *Research and Planning Collaborative Efforts*

- CZMA should drive funding and coordination of coastal research, with special emphasis on climate change and hazards research.
- Establish an information clearinghouse to share relevant information across regions and among stakeholders at all levels.

### *Land Management and Acquisition*

- Provide funding for preserving open space and/or for habitat buyout programs, such as Stafford Act or the Coastal Estuarine Land Conservation Program (CELCP).
- Build network of protected habitats or migration corridors for species at risk from climate change or hazards.
- Collect fees on all developments that impact the ability of natural systems to adapt to rising sea level. Money will be used for land purchase programs.
- Incorporate land acquisition into post-disaster coastal hazards recovery programs.
- Identify hazard or high risk “priority zones.”

### *Education and Communication*

- Conduct training for coastal managers and government decision-makers on how to prevent, adapt, and mitigate climate change and hazard impacts. Tools might include “Climate Ready” certifications.
- Establish federally funded education and outreach programs on climate change and hazards.
- Target K-12 science curricula.
- Offer scholarships or fellowships for climate change and hazard related studies and/or professional development.
- Conduct regional best-practices and peer-to-peer information sharing workshops.