

IMPROVING THE CHANCES FOR DEVELOPING COASTAL COUNTRY SUCCESS IN ADAPTING TO CLIMATE CHANGE

James Tobey, Coastal Resources Center, University of Rhode Island
Pamela Rubinoff, Coastal Resources Center, University of Rhode Island
Donald D. Robadue, Jr.,* Coastal Resources Center, University of Rhode Island
Glenn Ricci, Coastal Resources Center, University of Rhode Island
John Furlow, United States Agency for International Development
Richard Volk, United States Agency for International Development
Glen Anderson, International Resources Group

Introduction

There is an unequivocal scientific consensus that increases in greenhouse gases in the atmosphere drive warming temperatures of air and sea, and acidification of the world's oceans from carbon dioxide absorbed by the oceans. These changes in turn can induce shifts in precipitation patterns, sea level rise, and more frequent and severe extreme weather events (e.g. storms and sea surge). All of these impacts are already being witnessed in the world's coastal regions and are projected to intensify in years to come. Taken together, these impacts are likely to result in significant alteration of natural habitats and coastal ecosystems, and increased coastal hazards in low-lying areas. They can affect fishers, coastal communities and resource users, recreation and tourism, and coastal infrastructure. Approaches to planned adaptation to these impacts can be drawn from the lessons and good practices from global experience in Integrated Coastal Management (ICM). The recently published USAID Guidebook on Adapting to Coastal Climate Change (USAID 2009) is directed at practitioners, development planners, and coastal management professionals in developing countries. It offers approaches for assessing vulnerability to climate change and climate variability in communities and outlines how to develop and implement adaptation measures at the local and national levels. Six best practices for coastal adaptation are featured in the USAID Guidebook on Adapting to Coastal Climate Change and summarized in the following sections.

Adaptation as an inclusive, participatory, and on-going process

Coastal adaptation needs to be practiced as an inclusive, strategic and adaptive process for assessment of climate change risks, planning, securing commitment and funding, implementation, and evaluation. This is readily built on the planning and implementation approach or cycle commonly used in program development. A vulnerability assessment leads to planning and selection of a course of action, formal adoption or mainstreaming of adaptation actions, implementation, and evaluation. This highlights a central message of the Guidebook: the process of coastal planning and action is not radically changed by applying a climate lens. A broad range of stakeholders should be engaged in the process to ensure salience and ownership of adaptation interventions, and therefore more effective implementation and sustainability. Political support is essential for successful coastal adaptation.

Using best available knowledge

Systematic knowledge and understanding plays a major role to guide the wise use of coastal resources, resolve human-induced problems, and improve governance systems. This need for information in planning and decision-making becomes more evident for climate change due to the complexity and uncertainty of climate change impacts. Uncertainty is often seen as a barrier to action, since detailed, site specific predictions of coastal change are not available. But, by integrating the best available knowledge and involving local communities, it is possible to take responsible action in situations where there are uncertainties and imperfect information. Local knowledge can help answer the basic question: "Has the frequency, magnitude, or timing of precipitation, extreme weather events and other climate impacts changed in the last several decades?" A review of historic records for climate variability and hazard events in a specific area can also help validate the projections. Spatial data and maps to visualize biophysical impacts (e.g., shoreline, storm surge, and flooding maps) also aid in this exercise.

Scenarios that reflect a range of low to high degrees of change can be used by stakeholders to assess vulnerabilities and identify issues and adaptation measures. Scenarios can also help move dialogue from a debate about exactly how the climate will change to a discussion among key stakeholders, experts and project staff on the implications of

the different scenarios (high, medium, low change), and on the degree of risk that society is willing to tolerate before action must be taken.

Strategically define priorities, goals, and objectives

Another good practice and fundamental feature of ICM programs is to strategically select a limited number of management issues with attention to the nature of the problem. This entails defining early on the goals and objectives of the management initiative. Coastal adaptation efforts need to focus initially on a limited set of key climate threats and adaptation issues that capture the interest, imagination and commitment of local residents and the government departments most directly involved. The information needed to set priorities comes from a vulnerability assessment that discovers what assets are most sensitive and exposed to climate change, and identifies the adaptive capacities needed to address climate change impacts (USAID, 2009) Priorities should be selected through an inclusive process that involves the major stakeholder groups and decision-makers. It is their perspectives and interests that will influence the criteria used for judging risk and prioritizing concerns.

Tailor coastal adaptation to local conditions

Coastal adaptations should be “tailored” to the local context through an inclusive process that matches the climate change issues with the technical capabilities and the capacity of the institutions and community stakeholders of the place. Key questions include: What is the pre-existing degree of awareness and salience of climate change impacts? What is the locus of decision-making power? What is the capacity to address coastal issues? What is the country’s or place’s “readiness” to tackle accelerated climate change? The capacity to respond to climate change issues will grow with time, experience, and the positive reinforcement that comes with success. Early successes of adaptation may be attained by establishing setbacks and buffer areas, for example, in undeveloped areas or areas proposed for future development that are exposed to flooding and erosion. In heavily developed areas facing potential increases in erosion, sea level rise, or flooding, the favored adaptation option may be structural shore protection (to stabilize the shoreline) versus retreat. Coastal municipal leaders should not be under any illusion that they can continue to build infrastructure and develop without taking into account coastal hazards, flooding and climate change impacts. In underdeveloped areas, where existing investments are low, the opposite may be more appropriate—i.e., a strategy of retreat would be favored.

The USAID Guidebook on Adapting to Coastal Climate Change provides summary information on 17 adaptation measures, gathered with the assistance of coastal practitioners on common themes such as their relevance to climate change as well as practical design and implementation considerations. The best adaptation response by a community, economic sector or national government will rarely involve a single, stand alone measure. Responding to the wide array of climate change impacts requires a combination of measures working together in a complimentary fashion. In selecting the best combination, it helps to look for interdependencies between individual measures and the benefits of those measures not only to climate change, but to good coastal management.

Build reinforcing linkages among the many possible adaptation entry points

Integrated coastal management requires coordination of effort across different levels of government and sectors. Overcoming the policy and functional fragmentation and overlap that plague the governance of coastal areas is a central goal of ICM. Experience shows that both national mandates for ICM and incentives that encourage appropriate action at lower levels in the governance hierarchy are needed. This kind of coordination is called ‘mainstreaming’ and involves integrating climate concerns and adaptation responses into relevant policies, plans, programs and projects at the national, sub-national, and local scales (USAID, 2009). Mainstreaming is what helps provide adaptation the funding and authority required to put measures into action. For mainstreaming to be successful there needs to be reinforcing linkages between the different vertical and horizontal entry points. Government, together with non-governmental partners, must play a pivotal role in fostering the connections across national, sectoral, and place entry points.

Evaluation and adaptive management

Good ICM practice tells us that efforts should maintain a strategic focus throughout program formulation and implementation by continually defining and redefining the issues—the problems and opportunities that are the management focus—drawing on broadly based input and deliberation. Learning based management is precisely

what is needed in climate adaptation. Once coastal adaptation measures are implemented, there will be considerable interest in how they perform and policymakers will be keen to demonstrate that the measures are beneficial to the citizenry. They also will want to assuage the concerns of stakeholders who have borne some of the costs associated with the measures. The public will seek assurances that the measures afford them as much protection as possible from the impacts of climate variability. All parties will expect the measures to be adjusted if they do not perform according to expectations. As evaluation results become available, policymakers, stakeholders, or the public may be motivated to press for changes in the choice of adaptation measures, their design, or their implementation. Most mainstreamed adaptation measures are in the 'no regrets' category, that is, the community and region benefit from their implementation regardless of the amount of climate change induced problems. The process of reflecting on these changes based on evaluation results is referred to as adaptive management.

Putting the USAID Coastal Adaptation Guidebook into Practice

Coinciding with the release of the guidebook is a number of efforts to communicate and promote the use of the approach. Outreach, training and feedback workshops have been held in Berlin, Vietnam, Panama, Indonesia and the Philippines. The guidebook authors are engaged in place-based demonstration of mainstreaming coastal adaptation in community conservation planning in the Republic of Marshall Islands. Training for decision-makers was carried out in Vietnam in cooperation with the National Oceanic and Atmospheric Administration (NOAA) in 2009 and just underway in 2010 is a pilot vulnerability assessment and adaptation planning for Bagamoyo District in Tanzania. Mainstreaming coastal adaptation in sustainable artisanal fisheries is being incorporated in The Gambia and Ghana. Simultaneously with The Coastal Society's 22nd conference is the three week long international Global coastal adaptation Institute at the University of Rhode Island.

The pilot project aims to apply methodology and techniques in the Republic of the Marshall Islands. This pilot application demonstrates techniques of the Coastal Adaptation Guidebook—e.g., how to mainstream adaptation through a national entry point (Reimaanlok,--the way forward--the National Conservation Strategy), with its direct application at the local atoll level where it is implemented. Climate mainstreaming work was first tested in the Namdrik atoll in September 2009, where the community is suffering from coastal erosion partly due to climate change impacts. Coastal Management Advisory Council (CMAC) has initiated the management planning phase, and feels that it is critical to include adaptation to shoreline erosion within its management strategy to protect the community's natural resources and infrastructure. The next step for CMAC will be to continue community consultations to help Namdrik address erosion problems that will likely be exacerbated by accelerated sea level rise and increased storms.

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Donald D. Robadue, Jr.
Associate Coastal Resources Manager
Coastal Resources Center, Graduate School of Oceanography
University of Rhode Island
220 South Ferry Rhode,
Narragansett, RI 02882
www.crc.uri.edu
Ph. (401) 874 – 6128
Fax (401) 789 – 4670
email: robadue@gso.uri.edu