



Adapting to Sea Level Rise and Storms: Missed Opportunities and Continuing Development (case studies from USA and Bulgaria)

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Over the last several years, there have been significant discussions within the global scientific and coastal zone management communities about the need to adapt to the realities of long-term sea level rise and to make coastal development more “resilient” to hazards and climate change. With all of the talk, publications, and recognition of the problem, you would think that we had made significant progress, but this is not the case.

Once again, the USA has experienced the impact of a significant coastal storm, Hurricane Sandy. There were initially some serious post-Sandy discussions regarding the need to ensure that we simply don’t “just put everything back were it was.” Almost a year later, there have been few substantive moves to relocate property away from coastal hazards or to change the footprint of vulnerable coastal communities. This is particularly true of coastal resort communities in New York and New Jersey. Some communities have initiated large-scale efforts to elevate (in situ) infrastructure and private property. Raising buildings is only a workable solution if you also commit to holding all the beaches in place . . . forever. This is what the federal government has done for New Jersey and New York. The U. S. Army Corps of Engineers will be spending upward of \$US5 billion on shore protection projects following Hurricane Sandy. The vast majority of these funds will be spent pumping sand onto beaches from Delaware to Connecticut. The amount of sand they will move is staggering, approaching 25 to 35 million cubic meters. This is an adaptation model that cannot be exported to the rest of the USA. Nor can it be maintained for an extended period of time.

Along the Black Sea Coast of Bulgaria the risk of storms is not as great as that of the US East Coast, but long-term sea level rise is still a threat. In Bulgaria, most coastal development problems occur simply because people continue to build in areas that are too close to the coast or in very high hazard zones. Many development projects are immediately threatened by coastal hazards and the owners then seek protection by coastal engineering structures, leading to the continued engineering of the Black Sea Coast.

In both cases, bad decisions continue to be made because developing the coast is lucrative and government has no big-picture plan to initiate managed retreat. In the case of the USA, the federal government continues to aggressively subsidize irresponsible development and redevelopment. Scientists need to continue to play a role in pointing out the folly and eventual failure of this approach.