Adaptation Behavior in the Face of Global Climate Change and Sea Level Rise: Survey Responses from Experts and Decision Makers Serving the Florida Keys

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Florida Keys are on the Frontlines of Climate Crisis

- Florida Keys represents a unique ecosystem which contains a multibillion dollar tourism & nature-based economy (with an average elevation of less than 1.5 m above sea level).

- Accelerating sea level rise, extreme hydrometeorological events (e.g., tropical cyclone activity, storm surge & other disturbance events) threaten to exceed the resilience of socio-ecological systems in the Florida Keys.

- The Florida Keys also provide unique insights into emerging management challenges associated with adaptation to global climate change and accelerating sea-level rise.

Study Objective

- Understanding how decision makers serving the Florida Keys (Federal, State, regional and local management personnel, environmental specialists, policymakers, community leaders) are anticipating & planning to address the emerging challenges with climate change and sea level rise.

Survey Implementation

- Individuals contacted to complete the anonymous online survey were from such organizations as the National Oceanographic and Atmospheric Administration (NOAA), U.S. Geological Survey (USGS), U.S. Environmental Protection Agency (EPA), the National Weather Service (NWS), U.S Fish and Wildlife Services (USFWS), the National Parks Service (NPS), U.S. Army Corps of Engineers, (ACE), Florida Department of Environmental Protection (DEP), Florida Department of Transportation (DET), Florida Fish and Wildlife Conservation Commission (FWC), South Florida Water Management District (SFWMD) Monroe County, Key West, Marathon, Islamorada, Key Colony Beach, Lawton, Florida Keys Aqueduct Authority (FKAA), Florida Keys Mosquito Control District (FKMCD), Key Largo Wastewater Treatment District, The Nature Conservancy (TNC), Reef Relief, Audubon Society, the Red Cross, Mote Tropical Research Laboratory and MarineLab.

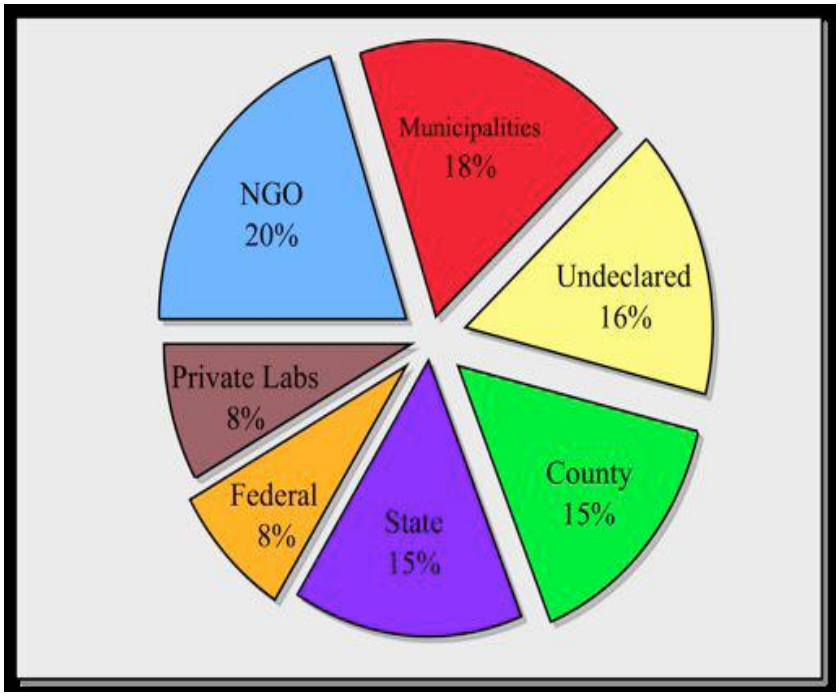
Survey Instrument & Sample

The Survey Instrument
5 sections, 40 questions.

Sample: 845 total personnel throughout the Florida Keys

Data Collection: Online survey with anonymous participation over a two month period (June and July, 2008)

Received 225 usable responses (response rate 26%).



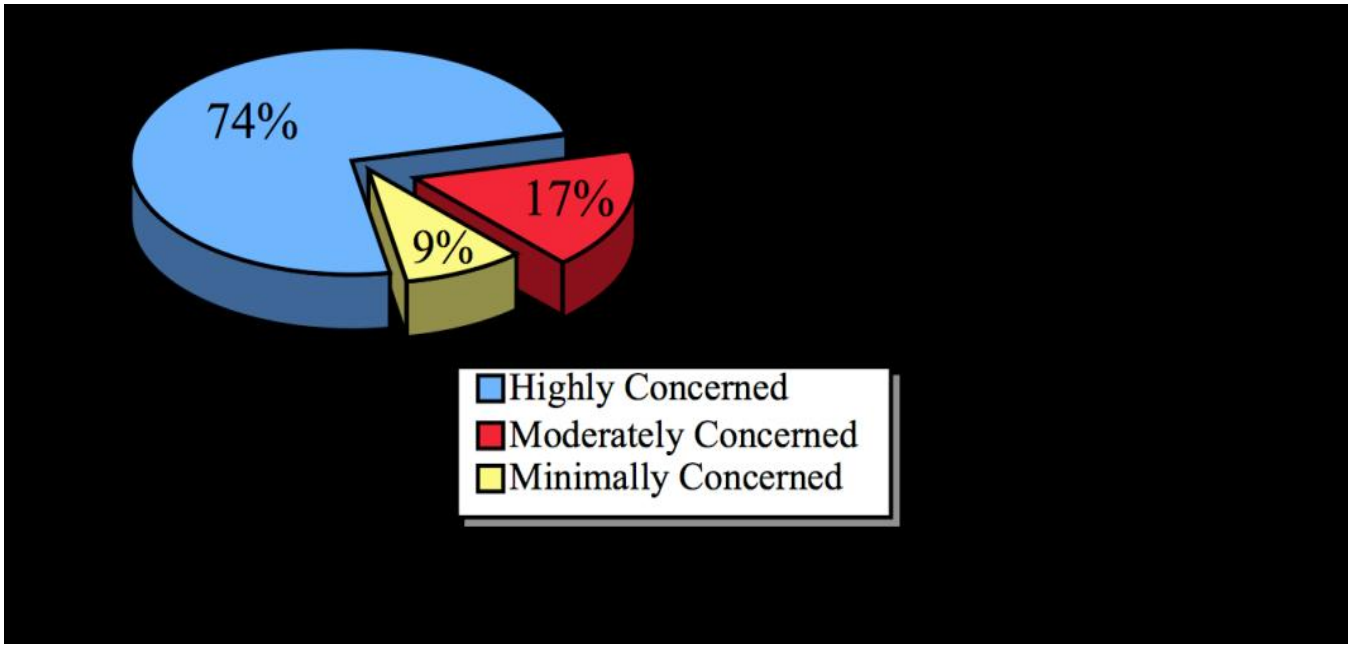
Survey Respondents by Affiliation

Survey Respondents by Profession

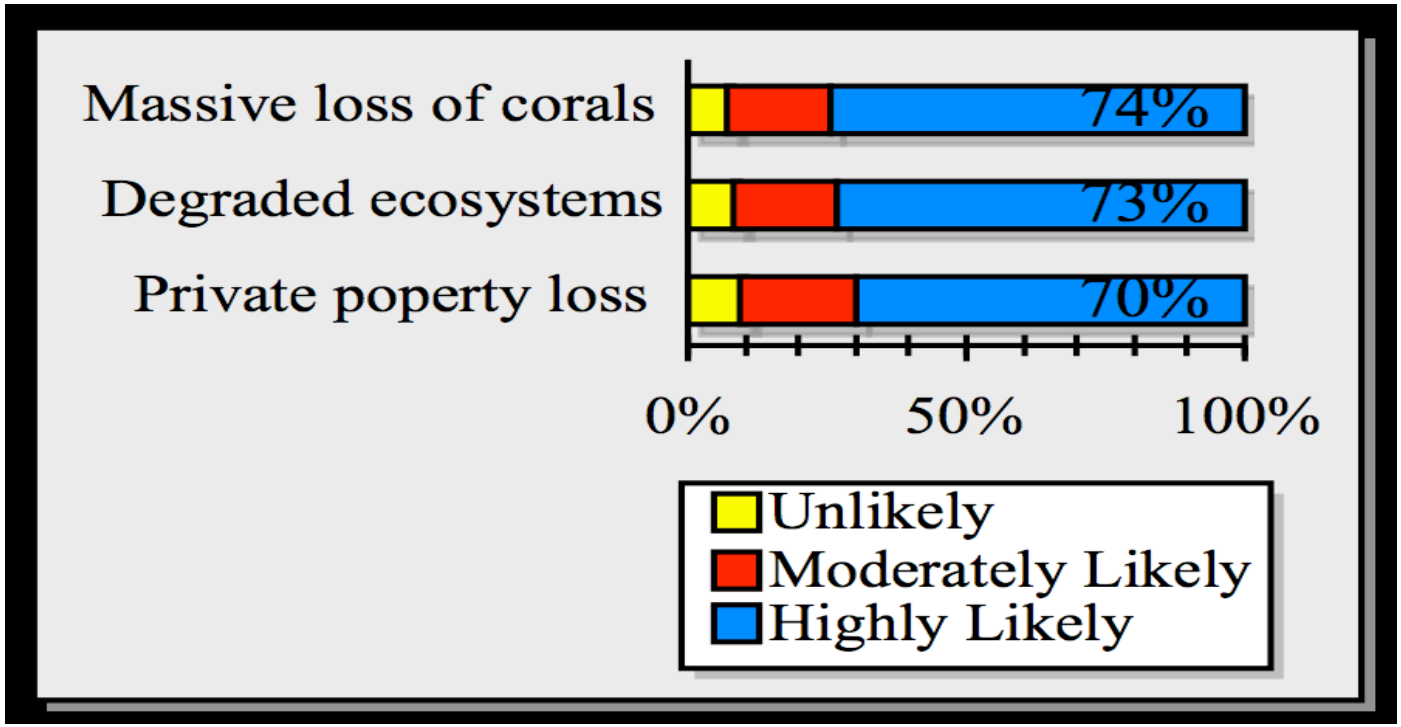
Environmental Specialist	Planning, Permitting, Engineering and Code Enforcement	Administration, Program and Resource Management	Elected office, Emergency Management, Community Development, & Social services	Other	Total
49 (22%)	45 (20%)	44 (19%)	24 (11%)	63 (28%)	225 (100%)

The average number of years employed in their current profession was nearly 15 years, and the average number of years employed in the Florida Keys was nearly 13 years.

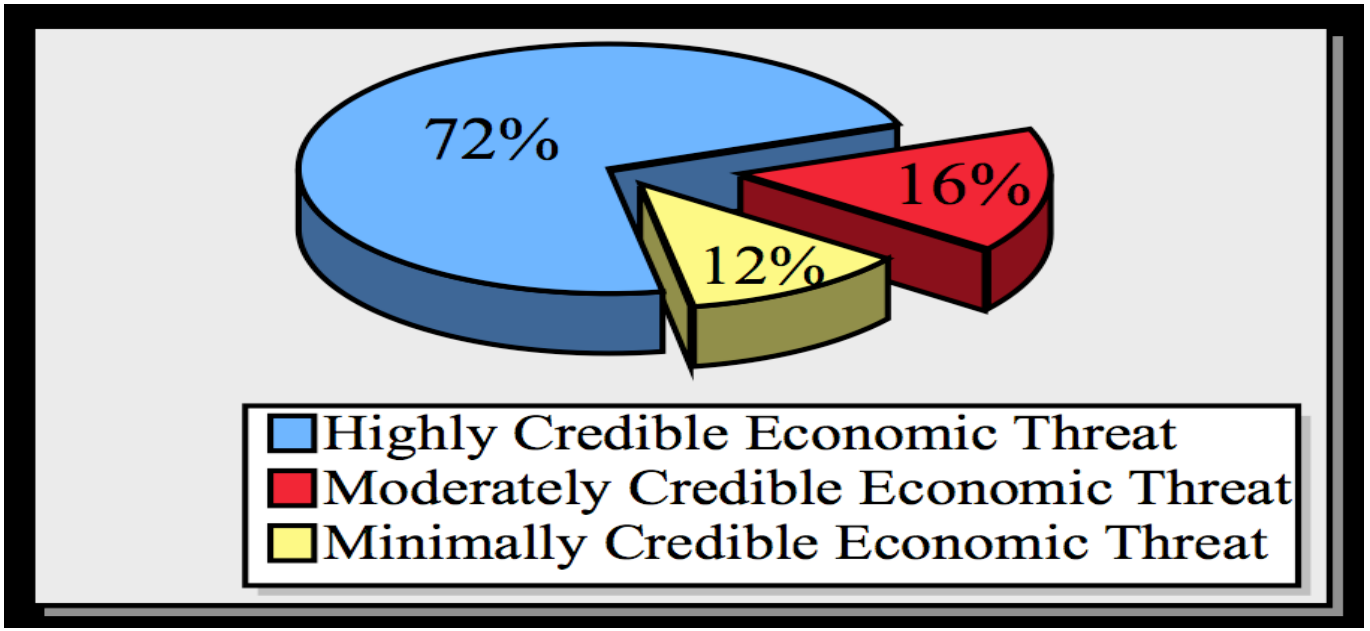
Concern about Climate Change & Sea Level Rise in the Florida Keys



Projections of Adverse Climate Change Impacts in the Florida Keys



Credibility of economic threat of a significant sea-level rise to the Florida Keys

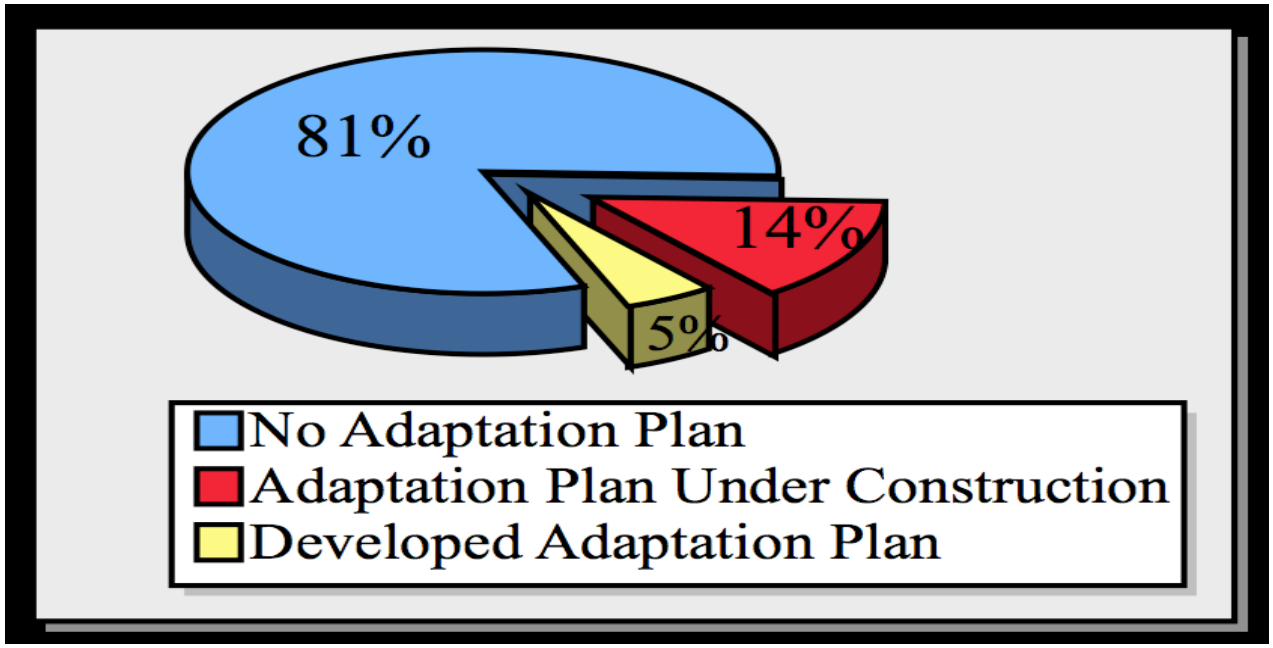


Challenges to Adaptation Initiatives

- A major information-action gap exists in understanding the risks of climate change & sea level rise and how to proceed with proactive measures at the local level.

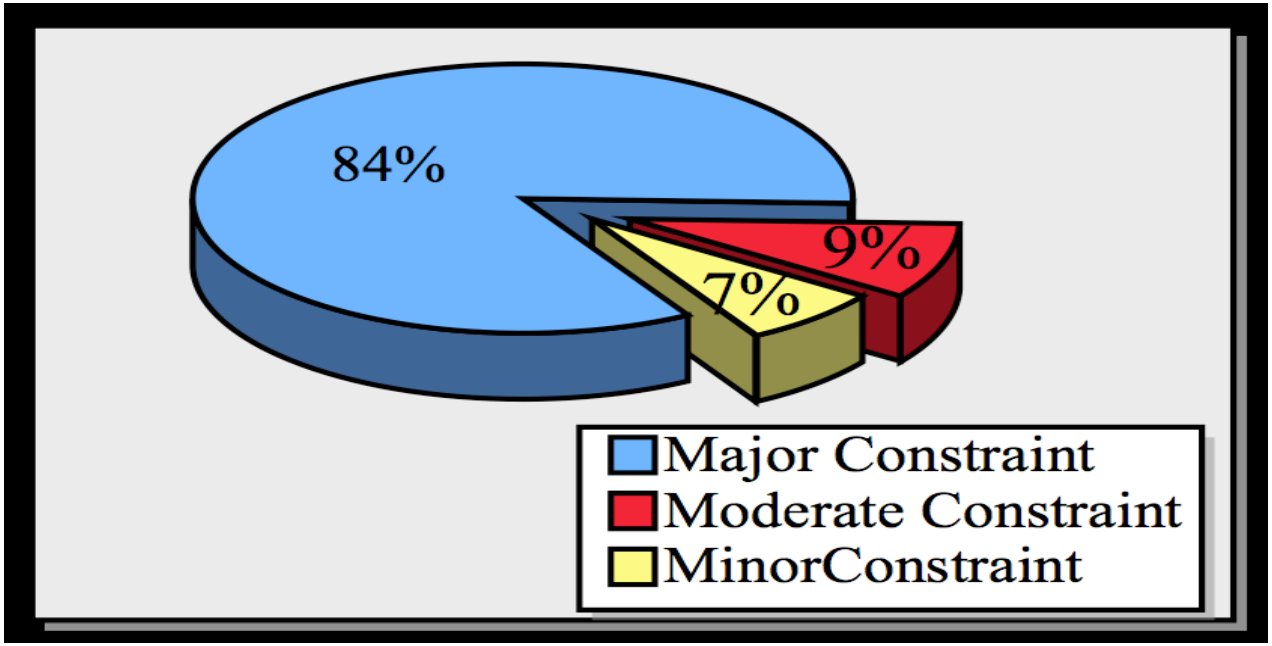
- Survey responses reveal that Florida Keys decision makers are currently operating with limited resources, direction and leadership, and they lack a formal institutional frameworks necessary to shape and execute adaptation measures.

Major Challenges to Adaptation



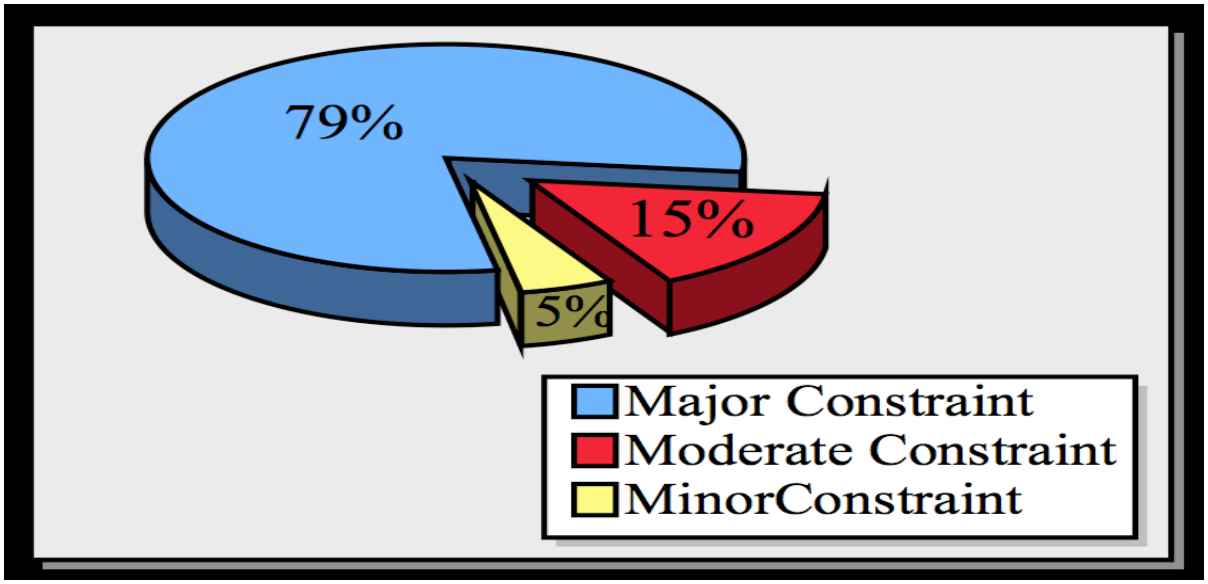
Most respondents (81%) reported that their agency or organization does not have a climate change adaptation-action plan or they do not know if they have a plan.

Major Challenges to Adaptation



Most respondents consider insufficient budget (84%) and insufficient staff resources (76%) as major constraints to the development of climate change adaptation policies.

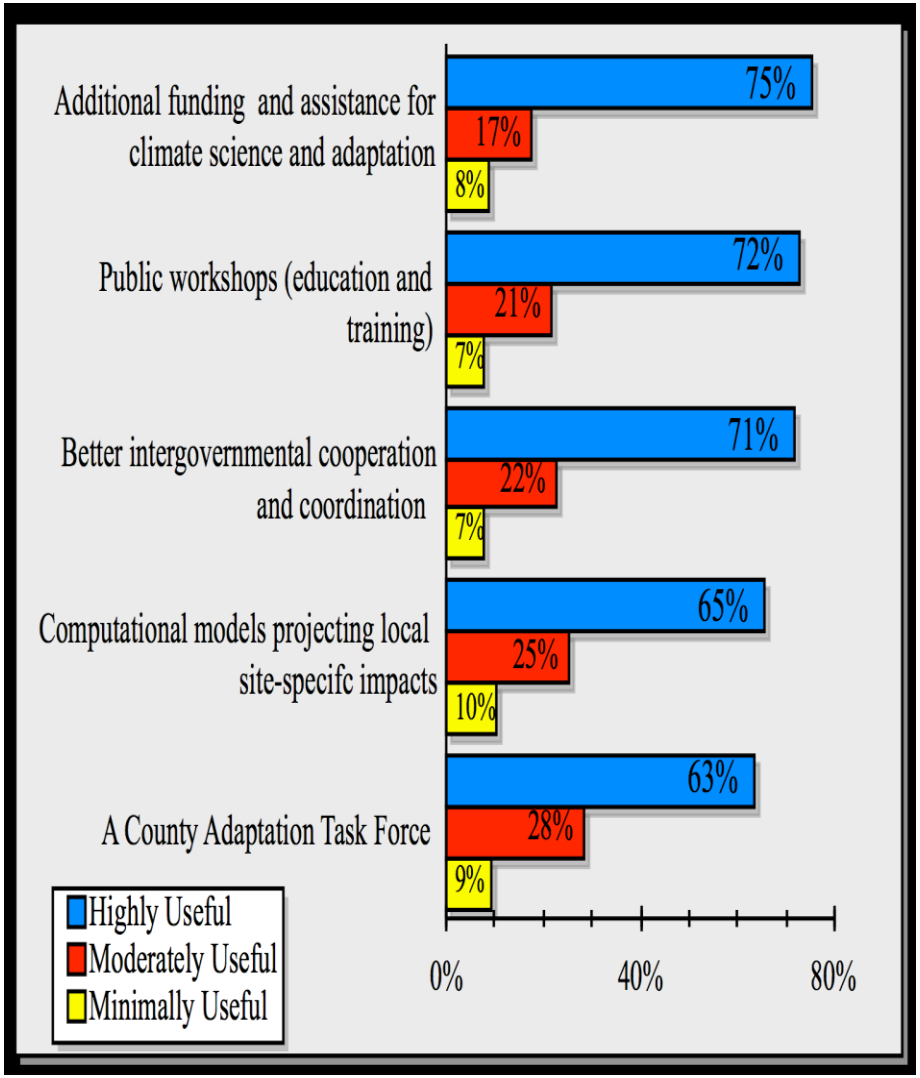
Major Challenges to Adaptation



A large majority consider lack of direction & leadership (79%) and lack of perceived importance to public officials or staff (76%) as major constraints to the development of new climate change adaptation policies.

Actions Supported

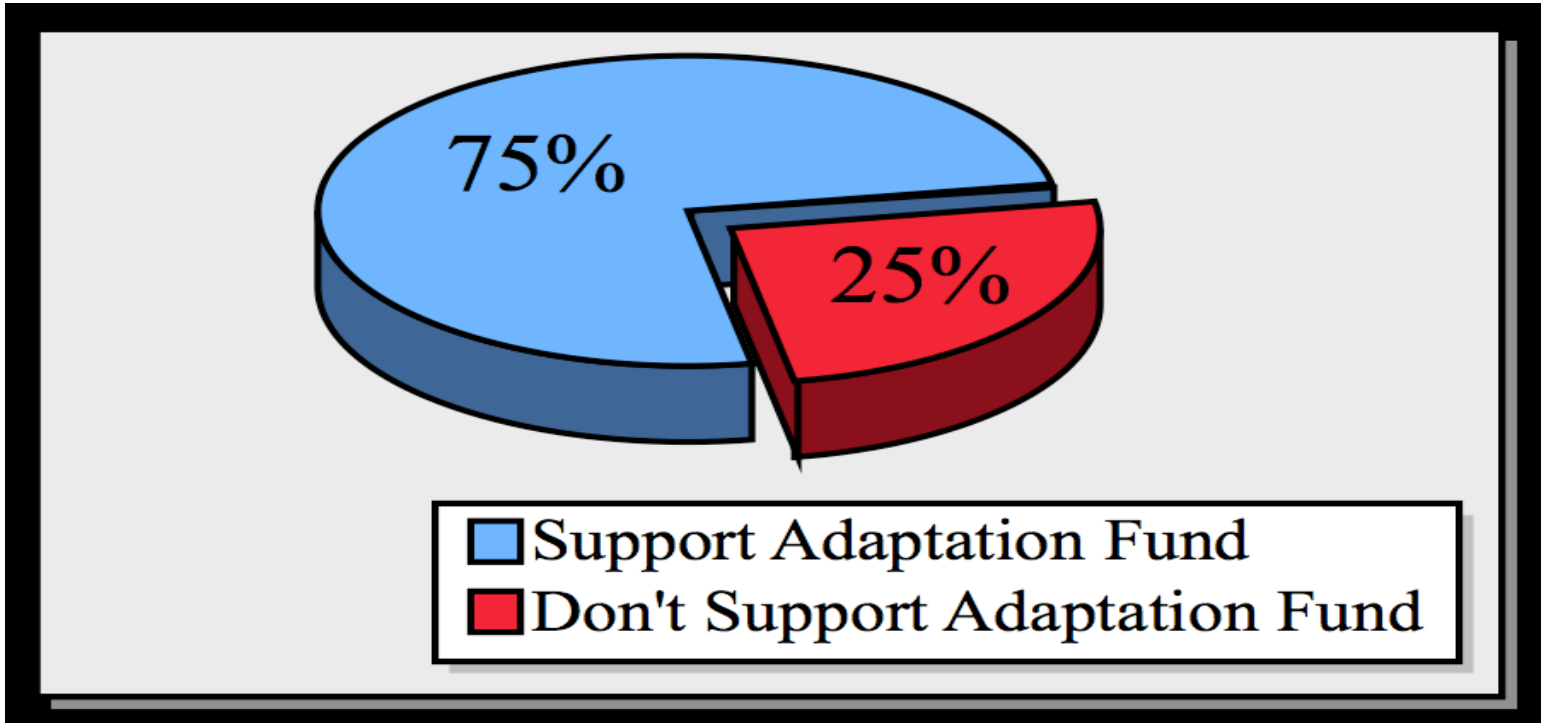
Demand for risk reduction initiatives underscores the need for new types of information, training, organizational and financial inputs for developing & implementing adaptation measures in the FL Keys.



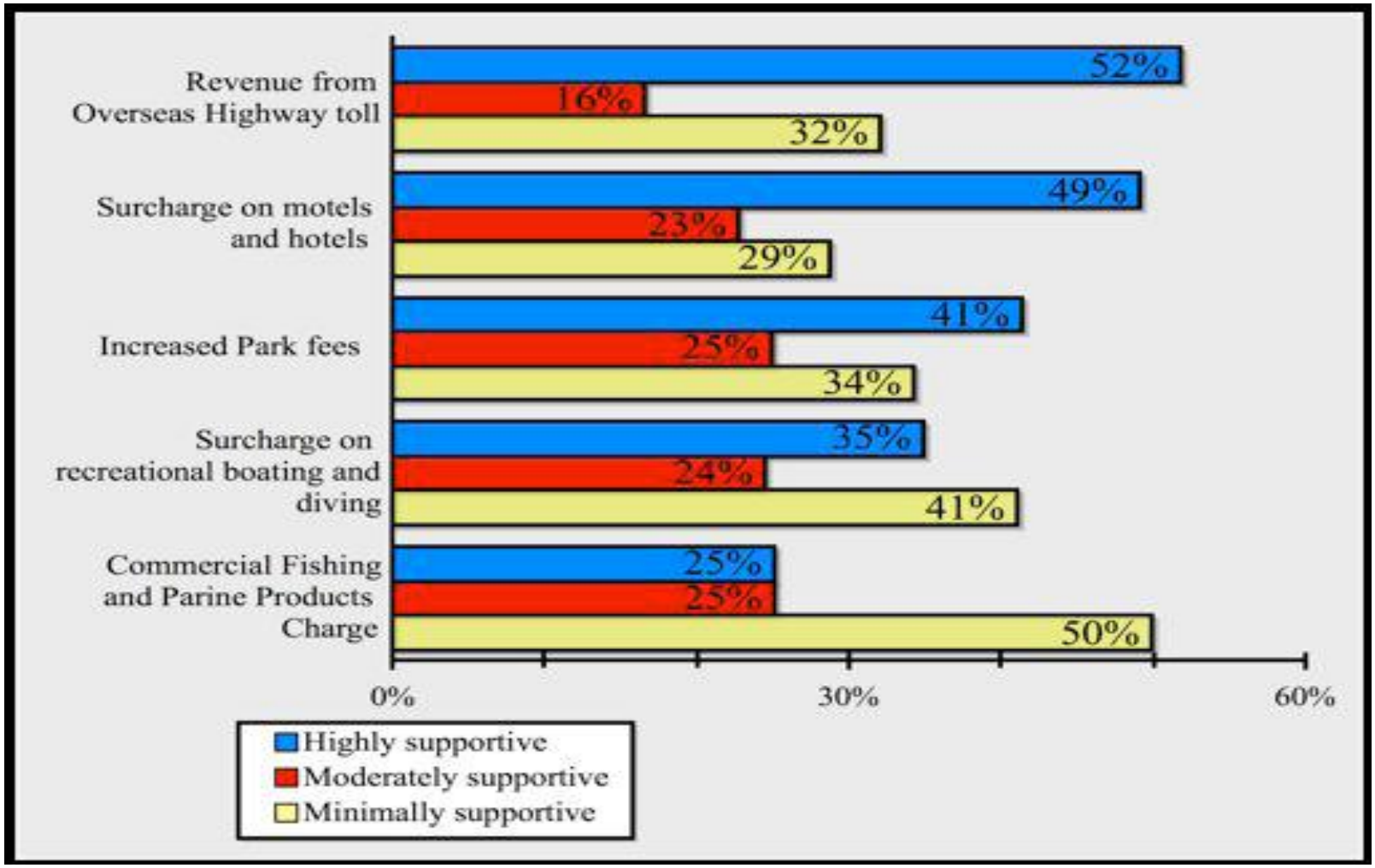
Financing Adaptation

- Feasibility of a proposed ‘Community Adaptation Fund’ to finance Adaptation.

Willingness to Support Community Adaptation Fund (CAF)



Willingness to Support Proposed Funding Mechanisms to Contribute to 'Community Adaptation Fund' for the Florida Keys



Conclusion

- Given decision makers ability to ‘learn through experience’, their risk perceptions are more robust to detect the signal-to-noise of climate change and sea level rise.

- Through documenting their responses we attempt to provide input for reducing the information-action gap, enhancing adaptive capacity to address the emerging challenges with climate change & sea level rise in the FL Keys and beyond.