



Green to Gray: Understanding Stakeholder Values to Increase Support for Adaptation

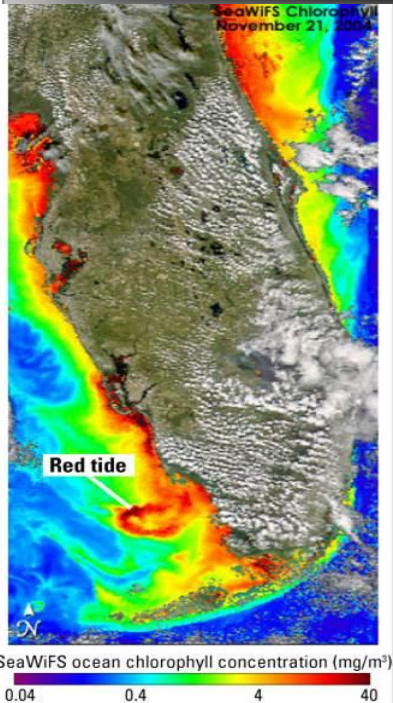
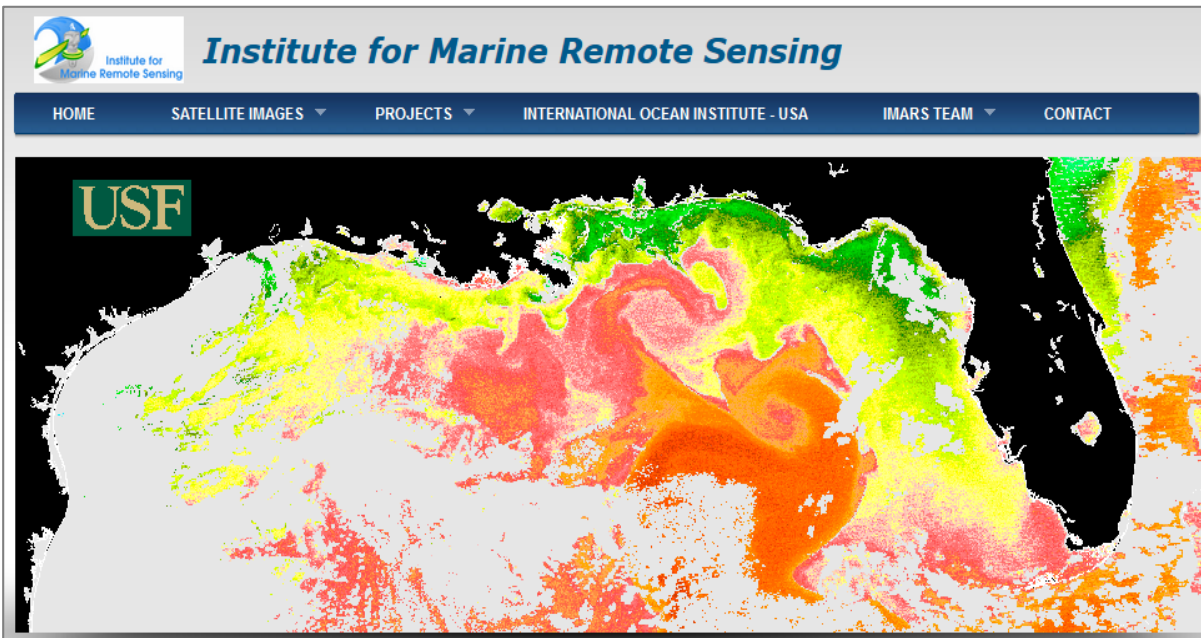
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This Session

- Understand how values influence perceptions *and* preferences for adaptation and public finance
- Increase your ability to incorporate values-based messages into outreach and “in-reach”
- Improve messaging for the 6 Priority Topics for Community Rating System Program for Public Information credits
 - Activity 330 (Outreach Projects)
 - Activity 420 (Open Space Preservation)
 - Additional topics: stormwater, natural floodplain functions, and flood-related hazards





<http://imars.usf.edu/>

High resolution satellite images

- Weather and climate change on oceans, wetlands, coastal ecosystems
- Stakeholder engagement research to support decision making
- Partnerships with agencies, municipalities



Advancing International Adaptation Research and Local Planning Methods in Coastal Communities

METROPOLE

An Integrated Framework to Analyze Local Decision Making and Adaptive Capacity to Large-Scale Environmental Change

SLR/SS Vulnerability & cost assessments,
stakeholder workshops in 3 countries,
Meetings with elected officials, staff, organizations,
neighborhood leaders and scientists



Town of Selsey, UK



City of Santos, BRAZIL

BELMONT
FORUM



Broward County, US

Metropole Survey: Prototypical Adaptation Options

Which Adaptation Options Should Local Government Implement and When?

Now/10/25/100/Never/Unsure

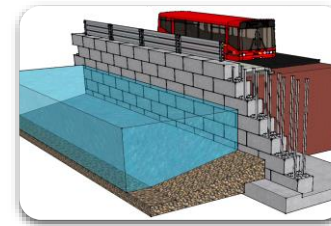
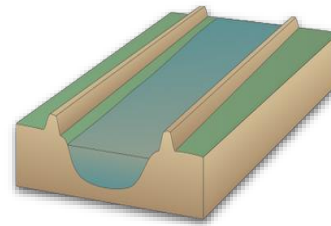
1. Build new or higher seawalls
2. Build levees and use pumps to maintain dry areas
3. Require new buildings elevated above minimums
4. Use innovative or green technology to reduce flooding
5. Raise height of canal flood gates
6. Purchase vulnerable land from residents
7. Purchase vulnerable land from businesses
8. Restrict new building in vulnerable areas
9. Restrict rebuilding in vulnerable areas after damage
10. Elevate or harden coastal transportation infrastructure
11. Relocate vulnerable public facilities like water treatment
12. Conserve existing natural areas to protect coasts
13. Restore/increase amount of natural areas
14. Nourish beaches and build dunes
15. Climate proof ongoing infrastructure/development
16. Move public water supply away from coast



Which Adaptation Options Should Local Government Implement and When (Now/10/25/100/Never/Unsure?)

Same pattern in all 3 countries

- Local Gov Should Act **NOW** and **10 Years**
- Same top options: conserve/ restore natural spaces, restrict new and redevelopment and use green tech to reduce flooding
- Delayed large “grey” projects and voluntary buy outs



Metropole Survey: Acceptability of Public Finance Mechanisms

Scale: 1 = not acceptable to 5= totally

1. Create low-interest loan program for flood proofing and elevating residences
2. Develop special district assessment for properties in highly vulnerable areas
3. Issue a bond to finance public infrastructure improvements
4. Create a new county-wide resiliency fund based on property taxes
5. Add flood resiliency surcharge on water utility bills
6. Custom option: US/sales tax, BR/transfer tax, UK/development tax

Metropole Findings: Acceptability of Public Finance Mechanisms

More acceptable: “targeted” fees/taxes on at risk property (special districts)

Lower: General charges to all community payers (utility /sales tax)

Moderate: Mechanisms that enable financing for adaptation (bonds/loans)



More research is needed!

- Differences between men, women, age groups
- Political affiliation – same order, but different scores
- Brazil and US similar, UK different

Fitting the Pieces Together



Social Factors Influencing Adaptation Options

Preferences for nature-based solutions and restricting development

- Offers co-benefits *now* -- aesthetics, recreation, wildlife
- Perception of fiscal savings, less government costs
- Restricting new development in vulnerable areas – protect paradise.
- “Delayed gray”...uncertainty of future risks/needs, dislike of large projects, and concerns about quality of life



Social Factors Influencing Adaptation Options

Why would “*Restrict new development/redevelopment in vulnerable areas*” get high “now” scores?

Variety of comments from participants

- “It’s common sense.” “We need to stop the stupidity!”
- “We know enough now.”
- Love/protect paradise
- “Too many buildings.” Anti-urbanism attitudes – dislike density
- Perceptions/misperceptions and judgements – i.e. beach front condos = rich people and tourists
- “Won’t impact me or my family.”

Social and Cognitive Factors Influence *Time Priority*

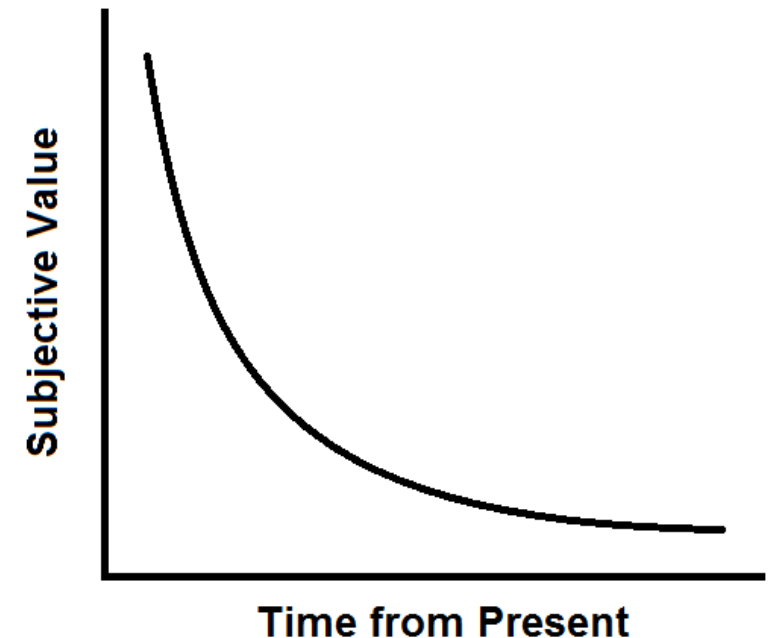
1. Formal and informal leadership roles
2. Social norms perceptions of what others would do
3. Personal experience with hazards increases concerns about threats and overall support
4. Future blindness – hard to imagine beyond 15 years
5. Future discounting -- immediate benefits are valued more than future benefits



Understanding Temporal Discounting

Behavioral economics and cognitive sciences study trade-offs

- *Immediate* benefits are valued more than future benefits
- Prefer SMALL rewards sooner over LARGER rewards later
- Longer time frame = increased discount of future benefit



Understanding Finance Values

- Fairness is a deeply held value
- Fair can mean different things to people
- Costs, taxes and fees that are specific to risk, place & owner are perceived as more fair, or acceptable than community-wide fees
- Factors
 - Was the risk known and voluntary?
 - Was the risk unknown?



***Putting this to Work for
Your Projects***

Build Knowledge Before Its Needed

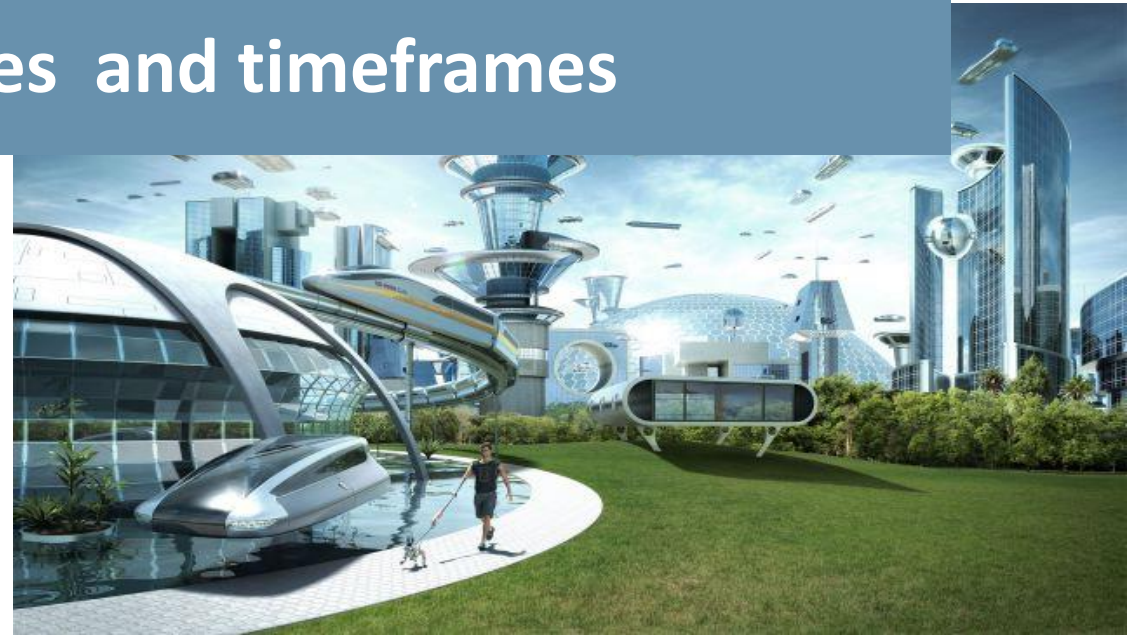
Meetings and outreach to promote nature-based solutions, improve understanding of finance and benefits/trade-offs

1. Start with staff, elected and community leaders
2. Encourage a narrative of cooperation that supports shared values and desired outcomes



Help People Visualize a Positive Future

- Encourage role as a leader – support social norms
- Explain why it's hard to “see the future”
- Use NOAA and other viz tools to show maps and changes
- Use attractive illustrations to show future scenarios
- Facilitate positive visioning exercises
- Define incremental steps, outcomes and timeframes



Use the Right Descriptions

Best Description of Concept Ranked by Voters	Voters	Opinion Elites
Nature-based solutions	43%	39%
Natural Defenses	21%	18%
Natural Infrastructure	17%	24%
Green Infrastructure	14%	14%

Borrow from Successful Examples

Measure AA: San Francisco Bay Clean Water, Pollution Prevention and Habitat Restoration Program.

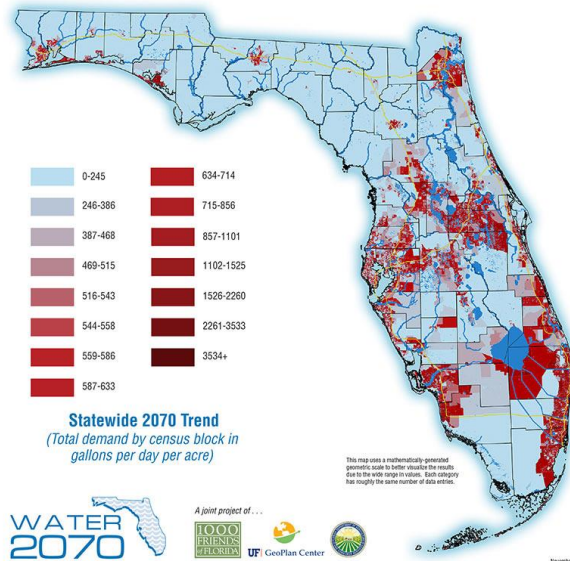
To protect San Francisco Bay for future generations by reducing trash, pollution and harmful toxins, improving water quality, restoring habitat for fish, birds and wildlife, protecting communities from floods, and increasing shoreline public access, shall the San Francisco Bay Restoration Authority authorize a parcel tax of \$12 per year, raising approximately \$25 million annually for 20 years with independent citizen oversight, audits, and all funds staying local?

Communicating Different Issues and Benefits

Mapping Florida's Future – Alternative Patterns of Water Use in 2070



A joint project of . . .

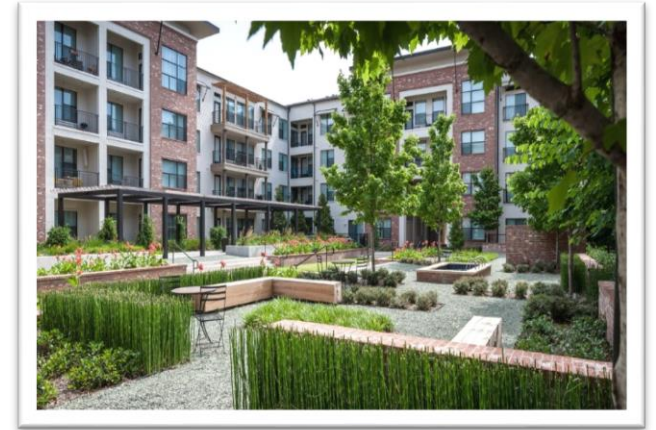


- Groundwater is recharged by rain/surface – takes years to filter
- Streets and stormwater systems *rapidly divert* large amounts of dirty water to bays, rivers
- Groundwater pumping and dropping water tables – sink holes
- Salt water intrusion & drinking water issues – increased costs for cities, people
- Flood management -- treat rain where it falls... reduce peak flows and increases ground water contributions --

Checklist for Integrating Social Factors Into Adaptation Planning

1. We protect what we love

Lead with nature-based, green technology and land-use
Focus on positive innovation/ outcomes



2. Define local co-benefits and appeal to multiple values

3. Address finance and perceptions of fairness: risk, use, individual vs community benefits and “who pays”

4. Include specific timeframes and steps – now, 5 years and 10 years

5. Call to action

Interdisciplinary Team



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Participating Communities

Thank you!

Download PPt:

<http://metropole.marine.usf.edu/>

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