Tillamook Climate Views, from Interviews and Survey Research

summary prepared for Oregon Sea Grant

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Background

This summary report makes use of two separate data sources and addresses topics relating to community resilience, including current phases of climate-change planning (Moser Eckstrom, 2010), reported hurdles to planning, current information needs, community-specific perceptions of the cost of climate change, and risks of most concern. The data were collected during two separate studies: first, in interviews conducted using risk-communication methodology developed in 2010 by Morgan et al. (Morgan, Fischhoff, Bostrom, & Atman, 2002) with elected officials, business leaders, and heads of county departments in Tillamook County; and second, in a 2012 survey (n=140) with coastal professionals and elected officials from the greater Oregon coast (see Winters, 2013). I is impossible to determine whether respondents participated in both research studies, as survey responses were collected anonymously. However, it should be noted that, at least for the interview data, special attempt was made to represent the various beliefs of community members by recruiting leaders who might represent a range of views.

This summary report of the research studies reflects knowledge and beliefs held about the socio-ecological system, including risks to the system, progress toward planning for those risks, and information needs.

Adaptation Planning and Belief in Climate Change

Tillamook County 2012 survey respondents (n=21) were highly divided in their perception of local adaptation planning. Nearly half said the community was *not currently involved at all in planning*, and nearly half reported being in the *implementing phase* (Figure 1). A few of the respondents reported being in the *understanding* and *planning* phases, which are conceived as stages between detecting a problem and implementing an adaptation option (Moser & Eckstrom, 2010). This question about adaptation planning based on Moser's diagram (2010) was not addressed during the 2010 interviews.

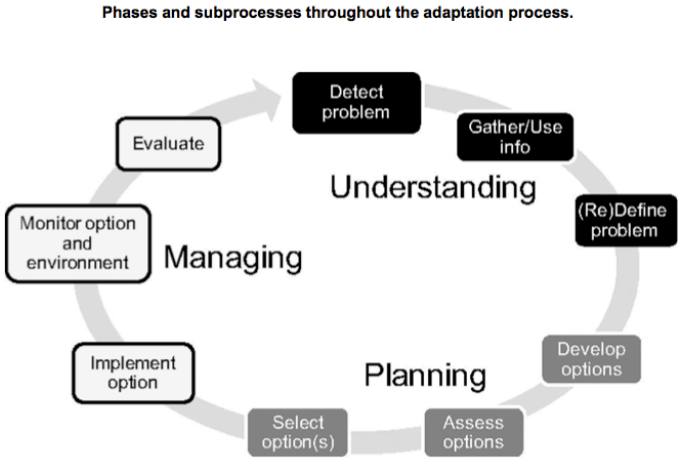

Figure 1: Phases and sub-processes throughout the adaptation process (Moser & Eckstrom, 2010).

Survey respondents were also highly divided in their belief that climate change is happening. Though in the minority (25%), naysayers were *extremely* sure that the climate is not changing. Most other respondents were moderately to extremely sure the local climate *is* changing. Confirming this finding, most 2010 interviewees reported being both aware of this adamant minority of naysayers and concerned about their local influence.

Hurdles to Adaptation Planning

Hurdles are barriers that can be overcome. The survey inquired about 13 hurdles that might be encountered in adapting. Survey respondents reported *encountering* the following hurdles most often* (1) lack of access to scientific information, (2) lack of urgency (i.e., other pressing issues are all-consuming), (3) lack of data, (4) lack of agreement over importance, (5) lack of agreement on solution options, and (6) and insufficient funding to prepare a climate adaptation plan. Survey respondents reported *overcoming* the following hurdles most often: (1) lack of clarity regarding how climate change relates to job, (2) lack of access to scientific information, (3) insufficient funding to prepare a plan, (4) lack of leadership, and (5) lack of data.

It is interesting to note that 2012 survey respondents did not list *opposition of elected officials to climate planning, lack of public support,* and other *explicit opposition* as specific hurdles to adaptation planning, especially in light of the 2010 interview findings. Many leaders during the 2010 interviews reported maintaining a low profile in local climate-change discussions, in order to protect political standing or business dealings or to maintain what they perceive to be, in their words, a "productive" way of dealing with the opposition. In other words, leaders who may have considered taking a more active role in the policy process stated their belief that advocating for climate change planning and activating policy response might be costly both politically and financially. These responses may reflect only personal perceptions at the time of the interviews; additionally, no one reported having tested the community's potential reactions to advocacy.

Finally, interviewees reported that climate change and related planning would compete with other, more important budgetary considerations (i.e., "there is insufficient funding for climate change planning"). The 201 interviewees listed other related costs, such as increased regulations that might limit private business, increased building regulations, and increased insurance prices. The concern over these related costs may be major hurdles in the planning process, and they were not measured by the 2012 survey.

Risk and Information Needs

From list of 15 potential topics of concerns, survey respondents reported the following topics of information as *most important to their work* (1) cost of climate adaptation, (2) predictions of ecosystem impacts, (3) economic vulnerability, (4) communicating about risks, (5) sea-level rise, and (6) communication about climate change in general. Survey respondents reported the following topics of information as *most needed* or *most lacking* (1) predictions of ecosystem impacts, (2) sea-level rise, (3) economic vulnerability, (4) communicating climate risks, (5) cost of climate adaptation, and (6) communicating about climate change in general.

Similarly, the 2010 study gauged awareness and knowledge of a few specific regional risks: coastal erosion and landslides, freshwater contamination, altered estuary productivity, altered ocean fish stocks, and forest fire. Interviewees were most aware of coastal erosion and landslides, and they most often referred to sea level (tides, storm surge) and the need for better management and protection of property, infrastructure, and people. During interviews, respondents' knowledge of

* Both lack of access to scientific information and lack of data are reported as having been encountered and overcome.

local climate-change risk was broad, and human systems were felt to be most vulnerable (Winters, 2011). The interview data also echo that respondents are lacking in information of species and habitat vulnerability (i.e., predictions of ecosystem impacts), especially in relation to how local human and ecological systems are intricately connected (e.g., cost of climate adaptation). Additionally, the interview data confirm that community leaders are interested in economic and social costs associated with climate change and related planning.[1]

Taking Charge

When asked who should initiate a local response to likely effects of a changing climate, 2012 survey respondents varied greatly in their opinions, except that most who did agree (more than half the respondents, n=13) felt that a *combination of government and other organizations* should do the initiating. Overall, survey respondents did not favor federal government involvement, but rather more regional or state government involvement. Interview data confirm this finding and provide some insight into why this is the case. For example, in relation to flooding, an environmental hazard regularly managed regionally, three responses were most referenced: (1) the local *institutional* response, (2) a local *non-institutional* response, and (3) the federal management response. Most highly favored were the local, non-institutional responses, such as businesses providing support during weather emergencies to maintain "business as usual" despite the hazard. Also highly regarded was the local institutional response, especially the high-quality work of the emergency management crew. Despite this high regard, views on the role of county government intervention varied. Interviewees were mixed on federal involvement, especially with regard to mapping and related flood mitigation programs that increase costs to local businesses. Interviewees also varied in their opinion on whether government should create policies for dealing with any hazard: a few considered private responsibility to be paramount, while nearly all expressed a need for better land-use planning, despite their frustration with complex coding regulations, permitting structures, and the related costs. These findings again show that adaptation planning is as much a political activity as it is a scientific and management pursuit.

Conclusion

few tentative recommendations for climate change and community resilience planning can be made based on these research studies. First, Tillamook participants in both studies sense and exhibit polarization in a number of ways. Respondents report either being in a more advanced phase of planning for climate-change adaptation (*implementation*) or not being involved at all. Additionally, respondents were polarized in their belief in climate change effects locally. Next, respondents reported having a sense that this same polarization exists in the greater community, to the point of affecting their actions as leaders in climate-change and resilience planning. In addition to polarized community beliefs and politics, budget constraints and the related costs of climate-change planning may present obstacles during a planning process. Respondents also reported other obstacles, such as a lack of urgency and disagreement over whether climate-change planning is a public-policy priority. Respondents reported having access to scientific data; however, information is still needed o topics such as predictions of ecosystem impacts and the related, hidden costs of climate adaptation (although no one mentioned the related costs of *not adapting)* Finally, leadership most likely would be encouraged and supported i it were made up of local partners from both institutional and non-institutional organizations. Based on the results of the survey and interviews, prior to a planning process it would be wise to implement pre-adaptation planning activities, such as climate-change communication training, a cost-benefit analysis of climate adaptation, and research into the political ramifications of climate-change advocacy.

[1] Survey respondents ranked *information on social vulnerability* as least important in their work.

References

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