1.0 Background

Ten Kahalu’u advisory board members were interviewed in August, 2010 as part of an ongoing evaluation research project to determine the effects of the PACMAN (Pacific Area Climate Modeling and Assessment Network) on the Kahalu’u community’s capacity to respond to climate change impacts on freshwater resources. Focus groups, telephone and face-to-face interviews were conducted to gauge advisory board members’ perception of water resource issues; their view of their community’s capacity to respond to environmental change; and the roles of community and government in responding to climate change impacts on water resources. Interviews typically lasted 30 to 45 minutes, generally followed a standardized interview script so that the same questions were asked of each board member. The interviews were intended to serve as a baseline assessment of community capacity prior to the infusion of PACMAN resources into the Kahalu’u community. Board members were asked if they could be interviewed again, at the end of the project, to determine if any changes to community capacity had occurred as a result of influence and resources and PACMAN. Recorded change between interviews undertaken before and after the PACMAN project will serve as pre- and post-test data to help determine whether any change to community capacity has occurred.

To determine a baseline assessment of community capacity, board members were asked several questions about the existing levels of leadership, resources, networks of relationships, and community support within the Kahalu’u community. The interview questions were based upon accepted dimensions of community capacity prevalent in the published literature consistent with Chaskin (2001); Baker and Teaser-Polk (1998); and Cuthill (2003).

2.0 Analysis

2.1 Current Issues

Recognition of current or potential freshwater issues in the Kahalu’u area varied among board members. Four board members commented on the salinity of the Kahalu’u well. Of the four comments about the Kahalu’u well shaft and its salinity, one stated the health risks of higher chlorides to residents with heart trouble. Another felt that the water simply tasted bad, while another cited saltwater intrusion into the well. The last comment conveyed an important message—that these issues are not new. “Yeah what is there then and what is there now, it’s just the amount of people that are there. What is different is the amount of people that are there now.” According to this interviewee, drinking water in Kahalu’u has always tasted differently. Since there are more people than ever living in and visiting the Kahalu’u area, complaints about the taste of freshwater in Kahalu’u get more press and exposure than ever before.

Three board members were concerned about freshwater flow into the marine environment. Of the three board members concerned about freshwater flow into
Kahaluʻu Bay, two were concerned about the effect that lower freshwater flow into the Bay may have on the Bay’s ecology. The other was apprehensive about increased freshwater flow into Kahaluʻu Bay drawing down the supply of potable water to the community. Three other board members felt that freshwater wells in the Kahaluʻu area were drying up. One remarked about the shallow depth of the well-shaft; another said that too much water was being pumped from local wells in the area, and the other mentioned that not as much water is being pumped in general on the Kona side of Hawaiʻi Island. Two interviewees felt there was a lack of understanding of freshwater resource flow and availability in the Kahaluʻu community. They felt that community members do not know where the freshwater originates, where it is coming from, and how much is left.

One board member mentioned the overall drought in Kona as a problem while another felt that there were no freshwater issues plaguing the Kahaluʻu community at all. From the remarks of the Kahaluʻu Advisory board, there is some divergence in defining problems related to freshwater resources in the Kahaluʻu community. Some are concerned about the salinity of the water, while others are worried about general freshwater availability or freshwater flow into Kahaluʻu Bay. Another didn’t feel that there were any challenges pertaining to freshwater resources currently being faced by the Kahaluʻu community. From the limited number of Kahaluʻu Advisory Board interviews conducted (n=10), there is a sense that problem definition may be one aspect that EPSCoR and the PACMAN project may need to focus on in their partnership with The Kohala Center. Achieving consensus on framing problems or issues is essential to mobilizing community support and developing community capacity.

2.2 Leadership
Leadership is considered to be integral to solving problems and developing community capacity. So it was appropriate that Kahaluʻu board members were asked whether they felt that leadership already existed in the Kahaluʻu community to influence others and help devise ways to solve water resource problems. The answers varied but five advisory board members believed that Kahaluʻu already had leadership and leaders present in the community. Three others consider leadership to be there in the community, but they are in need of coordination and organizing to fully develop. One advisory board member replied that there were no leaders that they knew of. The leaders that were named also varied, but Kamehameha Schools and The Kohala Center were mentioned four times apiece. No other individual or organization was mentioned more than once.

Kahaluʻu Advisory board members were also asked if they knew of what those leaders were doing, if anything, to address problems pertaining to freshwater and/or climate change in the Kahaluʻu community. Most interviewees were unaware of what the leaders were doing, but ‘stewardship’, ‘innovative marketing’, ‘willingness to identify problems and address them’, and ‘knowledge of scientific and cultural issues’ were some of the responses given.

Another interesting finding was that the leaders most frequently cited by Kahaluʻu Advisory Board members were not individuals, but two organizations: Kamehameha
Schools and The Kohala Center. No individual declared a leader by an advisory board member in the Kahalu‘u community was referenced more than once. A full list of the leaders named by the interviews is available in Appendix A.

2.3 Resources
Loosely defined, resources can vary from the skills of individuals to the strength of organizations or even access to financial capital. As one of the dimensions of community capacity, resources are essential to mobilize citizens and confront community problems. Kahalu‘u board members were asked to identify the resources currently available to the Kahalu‘u community. Answers reported by Advisory Board Members varied widely perhaps because the term ‘resources’ was loosely defined. The following resources were listed by interviewees and are presented in Table 1. The specific reason they were cited is also listed in Table 1, unless no reason was given.

<table>
<thead>
<tr>
<th>Organization or Individual</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bishop Estate</td>
<td>Own largest undeveloped portion of Kahalu‘u</td>
</tr>
<tr>
<td>Outrigger Hotel and Resort</td>
<td>Largest water user in Kahalu‘u</td>
</tr>
<tr>
<td>Kamehameha Investment Corporation</td>
<td>Management of Keauhou Resort; Cultural Restoration Activities</td>
</tr>
<tr>
<td>Department of Water Supply</td>
<td>Information, water quality testing</td>
</tr>
<tr>
<td>Hawai‘i County Research and Development; Hawai‘i County Sustainability Policy</td>
<td>Support for sustainability of Hawai‘i Island, community-based collaboration and capacity-building</td>
</tr>
<tr>
<td>The Kohala Center</td>
<td>Education and outreach</td>
</tr>
<tr>
<td>Kona Community Development Plan</td>
<td>Smart growth principles and policies for long-term watershed management</td>
</tr>
<tr>
<td>Hawai‘i County Department of Parks and Recreation</td>
<td>Support for education and outreach</td>
</tr>
<tr>
<td>Kamehameha Schools</td>
<td>Education, outreach</td>
</tr>
<tr>
<td>Kupuna living in Kahalu‘u (e.g., Uncle Mitchell Fujisaka)</td>
<td>Knowledge and historical perspective</td>
</tr>
<tr>
<td>Division of Aquatic Resources</td>
<td>Enforcement</td>
</tr>
<tr>
<td>UH-Mānoa, UH-Hilo</td>
<td>Organization, research, capacity-building</td>
</tr>
<tr>
<td>National Park Service</td>
<td>-</td>
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</tbody>
</table>

The resources listed by the Kahalu‘u Advisory Board members include public, private and nonprofit organizations. The public organizations mentioned included federal agencies such as the National Park Service, several divisions and departments from the state of Hawai‘i and many from Hawai‘i County. The only nonprofit organization cited as a resource available to the Kahalu‘u community was The Kohala Center. The only resources listed more than once were The Kohala Center and Kamehameha Schools/Bishop Estate, mentioned twice and three times, respectively.
Kahalu‘u Advisory Board members were also asked to list other types of support that had not already been mentioned. The answers included more scientific data (e.g., water quality data), more governmental support. One board member alluded that The Kohala Center can’t enforce its educational program and policies. Accordingly, more support and money for education and enforcement of environmental regulations from state and county governments was also referenced. Political will or buy-in was also deemed a necessity by two different board members to address Kahalu‘u water resource issues.

Although youth and adult education and training is a resource that can raise awareness of freshwater issues in Kahalu‘u, three of the interviewed Advisory Board members were unaware of any education or training opportunities available to the community. The following Kohala Center programs were the only official educational and training resources listed by Kahalu‘u Advisory board members: ReefTeach coral reef and tourist education program; Lawai‘a ‘Ohana Sustainable Fishing Camp; and the Citizen Science program. One other Advisory Board member mentioned kupuna in the Kahalu‘u area as an important educational and training resource available to the community. The answers were mixed about whether the community has the ability to find the necessary support to respond to climate change impacts on water resources. Two Advisory Board members were confident that the Kahalu‘u community is well on its way with one citing the Redlands Institute as an extremely valuable resource that can help the community understand some of the potential climate change scenarios. Three other board members weren’t so sure. One felt that the community could find needed support only if they are politically active and informed. “If politically informed. If not inclined, then they can’t”. Another felt that support would only be available if scientifically-based information can be presented demonstrating that climate change impacts to freshwater resources are evident. The other Advisory Board member on the fence about whether the Kahalu‘u community can find support for freshwater issues communicated the difficulty of obtaining support from the government during a time of extensive budgetary cuts. “It is really difficult to get support from government. Morale is low in government right now due to furloughs and budget cuts. The Kohala Center can help play a convening role”.

Kahalu‘u Advisory Board members identified a multitude of resources and support available to their community. The next section on networks of relationships alludes to the partnerships and collaborations necessary to solve collective action problems related to climate change and watershed management.

2.4 Networks

Current issues identified by Kahalu‘u Advisory Board members included the salinity content of the drinking water, water usage, freshwater flow into the marine environment and awareness of freshwater sources and availability. Without prioritizing the various issues involving Kahalu‘u water resources, they share one similarity: they all involve a common pool resource, in this case water. Common pool resources are typically characterized by problems such as congestion or overuse, and present some unique planning and management challenges due to the collective action problem.
Collaboration and networks of relationships are essential to common pool resource management and developing community capacity to leverage the resources available to the Kahalu’u community. For that reason, Kahalu’u Advisory Board members were asked whether they felt their community had the partnerships and collaborations in place to devise solutions to water resource problems. The answers were generally that yes, the community is willing, some of the partnerships are there, but a common goal must be articulated for successful collective action. Articulating to the Kahalu’u community how potential climate change effects on water resources would affect them could help catalyze collective action for mitigation or adaptation. However, at least one Advisory Board member was concerned about the multitude of organizations involved in Kahalu’u community, stating that “there are a lot of cooks in the kitchen.” The amount of different public and private organizations with differing missions and mandates may make collaboration difficult. Another interviewee expressed the need for leadership in getting partners together in the Kahalu’u community.

Thus far these various ‘dimensions’ of community capacity mentioned above—leadership, resources, and networks of relationships—seem to be mutually exclusive for the Kahalu’u community to develop community capacity. The last dimension of community capacity—community support—will be discussed next.

2.5 Community Support
Community support is defined by Chaskin (2001) as “support for some kind of mechanisms for or processes of participation by community members in collective action and problem solving.” Kahalu’u Advisory Board members were divided about whether there was sufficient support in their community to bring citizens together and work on water resource or climate change issues. Five Advisory Board members believed that there was enough community support; two did not think enough support was available in the community and three weren’t sure. Although five Advisory Board members agreed that support did exist in the community, their reasoning differed. Two felt that education and training initiatives such as ReefTeach and the Citizen Science program were instrumental in raising awareness and building community support. Another felt that support was available but the Kahalu’u community needed more involvement from the Native Hawaiian community. One interviewee thought that community support was available but buy-in from the Mayor’s cabinet was critical. Extensive support from new residents was a reason given by another Advisory Board member for why the Kahalu’u community had the support to confront water resource challenges.

Three Kahalu’u Advisory Board members were unsure of whether support currently exists in their community. Of the three, one interviewee conveyed the need for more education and scientific research, while another stated that there was not enough representation from the younger generation in Kahalu’u. The other thought that community support couldn’t start with government; it must begin with The Kohala Center and the University of Hawai‘i.

Two Advisory Board members were not convinced enough community support currently exists to confront issues pertaining to water resources and climate change. One described
the need for more buy-in from builders, developers and landscapers to conserve water in addition to codified changes in law that support low impact development initiatives. The other cited the limited education and training opportunities available to the community to understand water resource and climate change issues.

There seemed to be wide agreement on the importance of educational programs and scientific research for awareness and community mobilization. Although most believed that community support was evident, several comments reinforced the need to listen to community concerns. The last section summarizes the responses from questions about the role of government in building community capacity.

2.6 The Role of Government
Conceptions of the proper role of government in facilitating community capacity varied among the interviewed members of Kahalu‘u Advisory Board. Two Advisory Board members felt that the Hawai‘i County government should play a strong role in supporting and sustaining community capacity. Two others asserted that cooperation among all levels of government was necessary. Two interviewees felt that the proper role of government was to “listen to the community” and “keep communication lines open” with the Kahalu‘u community. One thought government should play “some sort of role” while another replied “government’s role is put way in the back”. Support for an educational and research center in Kahalu‘u was suggested by one Board member a role government could play in increasing community capacity. One Advisory Board member declined to respond.

Most interviewees felt that government should have a hand in facilitating community efforts to address water resource or climate change issues whether it means coordination, facilitation or just listening. If water resources become increasingly scarce or climate change impacts become severe in Kahalu‘u, collaboration between all levels of government, the community, private businesses, and nonprofits like The Kohala Center will be needed. Building community capacity now—the resources, relationships, leadership and community support—could help reduce the transaction costs associated with future mitigation or adaptation efforts.

3.0 Conclusion
Political will, the value of education and scientific research, and support from different levels of government were identified by members of the Kahalu‘u Advisory Board as resources needed to accomplish goals. The need for government to listen to community and the value of Kamehameha Schools, The University of Hawai‘i, and The Kohala Center were also noted as integral to developing community capacity in the Kahalu‘u community. Advisory Board members also stressed the need to explain scientific data in layperson’s language so that the information can be understood by community members. Communicating science to communities in Hawai‘i has been a challenge historically and climate change has become a thorny, divisive issue across the United States. To help develop community capacity in Kahalu‘u, PACMAN and The Kohala Center must help community members to define the problem at hand—in this case, the effects of climate
change on water resources—the options available to them, and then advise the community on the best course of action to take.
Appendix A. Leaders listed by Kahaluʻu Advisory Board Members

- The Kohala Center (mentioned four times)
- Kamehameha Schools (mentioned four times)
- Cindi Punihaole
- The Mayor
- The Board of Water Supply
- The Outrigger Hotel and Resort
- Bob Fitzgerald
- Deputy Director of Planning
- Greg Chun
- Kaʻeo Duarte
- Bishop Estate
- Surfrider Foundation
- EPSCoR

Appendix B. Full Roster of the Kahaluʻu Advisory Board

Aric Arakaki
Betsy Cole
Bill Walsh
Caroline Neary
Cindi Punihaole
Courtney Couch
Darlene Martin
Greg Chun
Guy Kaulukukui
Kaʻeo Duarte
Kaipo Perez
Kamana Beamer
Kanani Aton
Matt Hamabata
Paul Horner
Robert Fitzgerald
Samantha Birch
Samuel Gon III
Sara Peck
Tom Kane
Uncle Mitchell Fujisaka
Alex Frost
References

