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*PIRCA Evaluation: Development,  
Delivery, and Traceable Impacts –*

*With Particular Emphasis on the Contributions  
of the Pacific RISA*

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Contribution to the Ongoing Pacific RISA , Phase II, Evaluation

Report for M. Finucane, Ph.D., and V. Keener, Ph.D.  
Pacific RISA

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## Executive Summary and Recommendations

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This report constitutes a careful review and evaluation of the outputs and delivery of the Pacific Islands Regional Climate Assessment (PIRCA) through various outreach modes and opportunities. It traces the report's use and tangible impacts on policy and practice. Employing a multi-method approach and a number of independent data sets (media analysis, web search, outreach event evaluations, a survey and key information interviews), the results are internally consistent, mutually reinforcing, and comprehensive, although no review was undertaken to evaluate the specific work, contributions and outreach other key PIRCA partners have done. Thus, the findings are specific to the Pacific RISA, and may well underestimate the impact of the PIRCA as a whole.

Even so, what this evaluation found can only be synthesized in superlatives.

### Findings

#### ***Timely Input to the National Climate Assessment***

- (1) The PIRCA was delivered on time as a technical input report to the US national climate assessment. It constitutes a crucial underpinning of the Pacific regional chapter of the national report.

#### ***Successful Assessment Process***

- (2) The Pacific RISA developed an inclusive process to ensure that the relevant experts and stakeholders were meaningfully involved in the development of the PIRCA report.
- (3) The PIRCA process has served the crucial function of coalescing a dispersed research community and centralizing access to important scientific information for users.
- (4) The Pacific RISA in particular mastered the art of inclusivity, relationship building, and cultural sensitivity – all important in the region – in the process of leading the PIRCA process.

#### ***Highly Visible Media Work***

- (5) The Pacific RISA also, more than any of its partners (as can be discerned from the media coverage) ensured that relevant stakeholders and the public heard about the PIRCA once it was completed. It played the most important role in the media outreach, and led (or in one case, co-led) key outreach events after its release.
- (6) The active media work of the Pacific RISA resulted in a greater number of unique media hits than for any other technical input report (regional or sectoral), and was second only to the media coverage of the draft national assessment report. This significant coverage included a story in Hawaii's main newspaper, a cover story in a local weekly magazine, and an hour-long appearance on the local PBS channel. Most media was "earned" media, suggesting others viewed it as a crucial report to write about. Media coverage was local, regional across the Pacific and US-national, including stories oriented toward Congressional and DC audiences.

#### ***Inclusive, Informative and Impactful Outreach***

- (7) Participants of PIRCA-related outreach events assessed them as important opportunities not just to learn about the PIRCA report, but for networking and being in dialogue with each other, for peer-learning, and for reaching management and planning staff and elected officials.
- (8) The PIRCA constitutes the only technical input report that has received a hearing "on the Hill."

- (9) There is strong evidence for extensive awareness of the PIRCA report in Hawai'i among relevant stakeholders (the evidence base is less strong for other Pacific sub-regions).
- (10) Beyond the report itself, PIRCA-related outreach events were useful in several ways: they served as an important opportunity for networking and social capital building among stakeholders, for direct learning from experts and peers, for trust building between scientists and decision-makers, for giving the Pacific RISA visibility as the go-to point of contact, and for putting climate change and the assessment on the public and political record.

***High-Quality, Useful Information: Salient, Legitimate, and Highly Credible***

- (11) The PIRCA is perceived as very interesting to those who read (parts of) the report. Covering the wider Pacific region, speaking to more than Hawaiian concerns, and reflecting experienced climate change challenges also lends it perceived salience and legitimacy.
- (12) The PIRCA is perceived as useful in a number of ways: as a comprehensive information source, as a consensus document in political/policy contexts where action needs scientific backing or justification, as a communication and education tool, and as a research agenda-setting document. It has become *the* go-to reference document for climate change impacts in Hawai'i and the Pacific region that helps experts and non-experts alike to stay up-to-date on scientific developments, and get a read on overarching messages as well as regionally differentiated information.
- (13) The PIRCA earned highest marks for perceived credibility, which greatly enhances its usefulness both for scientists and for practitioners.

***Traceable Impact***

- (14) There is traceable use and impact of the PIRCA in state and federal policy-making, in state agency planning (through which it will also affect local planning and decision-making). Most frequently, to date, it has served as reference document, as source of information for speeches by political leaders, as backing for policy initiatives, and as motivation to rethink management approaches and alter plans.

## **Recommendations**

The undisputable success of the Pacific regional assessment process and clear results for the research and user community does not imply the work is done or that there are not important continuing opportunities to give the PIRCA "legs" and a life beyond the first year of outreach. This is partly the result of the phenomenal success of the report and related outreach, which inevitably opens further opportunities, partly the result of the Pacific RISA's ongoing relationships with users, and partly the result of the ephemeral nature of attention, awareness and memory of any report. In fact, very few of the suggestions made by interviewees reflected that something was done "inadequately." Rather, it is more like a case of starting to feed a stray kitten at the back door: she will be back for more love! Thus the recommendations should be read in that light.

The Pacific RISA has the opportunity to continue to be the go-to source for climate change-related information (particularly on all water related issues), and thus to strengthen its visibility and credibility among potential information users. The social capital built as a result of this process *must* not be lost.

***(1) Ensure that the PIRCA can be found by potential users.***

- Several key information hubs in the Pacific region (SPREP, PRiMO) as well as some of the PIRCA partners do not currently list the PIRCA report on their websites as resources. This should be remedied.

**(2) Produce more value-added PIRCA derivatives to keep the report alive and reach more audiences, particularly non-experts.**

- Create shorter, more focused, more accessible, and jurisdiction-specific derivatives (see specific recommendations on pp. 35-36).
- Provide more overt translation of science to policy alternatives.

**(3) Moderately adjust future regionally and stakeholder-specific outreach events.**

- Ways to improve outreach events differ by region as audiences differ in needs, capacities and interests (see specific recommendations on pp. 25, and 26-27).

**(4) Take advantage of additional outreach opportunities and better share the burden of outreach among PIRCA staff and partners.**

- Pacific RISA stakeholders and collaborators have suggested a range of additional outreach opportunities, some quite specific, that offer important ways to continue to illustrate the policy-relevance of the PIRCA (see specific recommendations on pp. 34-35).
- As the media analysis and repeat appearance of Pacific RISA staff (particularly, V. Keener) illustrates, the Pacific RISA has carried the lion share of outreach to date. Strategic division of labor among Pacific RISA staff and key PIRCA partners would lessen this uneven burden and give other PIRCA partners greater visibility for their role and contribution to the PIRCA report and process.

**(5) Use specific stakeholder suggestions to shape future Pacific RISA and partner research and assessment agendas.**

- Stakeholders have a great hunger for more information, much of it increasingly focused on the economic impacts of climate change, human security issues, adaptation options, and cultural implications of climate change (for specific suggestions see pp. 36-38).

**(6) Work with Senator Schatz's office, NCA and NCADAC on sustaining the assessment.**

- The value of the PIRCA is expressed in the desire among users for regular updates. To make this possible, there is a clear need for support the assessment leaders and contributing partners more substantially. An opportunity exists with Senator Schatz's office to lobby for such support in Congress. The NCADAC and the NCA Central Coordination Office would be extremely interested in working together to pursue this opportunity.

A final "soft" recommendation is to share this evaluation with the wider RISA and NCA community, as it is exemplary and can teach many lessons about the value of evaluations to those running RISA and similar programs, and to others involved in the national assessment, including in the effort to build a sustained assessment process and system.

## **1. Introduction: The PIRCA and Purpose of this Evaluation**

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For the Pacific RISA, evaluation of its efforts is one ongoing and central part of its work. In Phase II of its existence, it has established internal evaluation procedures and annually tracks its accomplishments. In addition, each year, the program requests an external evaluation of one or more components of its work. In 2012/2013, a significant and, at times, dominant part of the work of the Pacific RISA (particularly that of Melissa Finucane and Victoria Keener) focused on the PIRCA – the Pacific Islands Regional Climate Assessment. This effort involved all aspects of developing, writing, reviewing and producing a regional assessment report and related outreach and cooperative efforts. The central focus and purpose of the external evaluation this year therefore is to determine how broadly and in what ways the PIRCA report and related dissemination efforts reached and influenced different stakeholders in Hawai'i, the larger Pacific region, and beyond.

This in-depth evaluation is of significant benefit to a) the Pacific RISA's ongoing efforts to serve stakeholders and to advance use-inspired research, b) its efforts to position itself for renewal from NOAA in 2015; c) the collaborative that developed the PIRCA report; and d) the National Climate Assessment as it tries to understand its impact on the nation and as it establishes a "sustained assessment process" (Buizer et al. 2013).

In what follows, this document will briefly place the Pacific Islands Regional Climate Assessment effort in the context of the National Climate Assessment (Section 2) and then summarize the data and methods used to assess the PIRCA's impact (Section 3). The findings of this investigation are detailed in Section 4, focusing both on delivery and deliverables (i.e., outputs, Section 4.1), and on the perceived outcomes and impacts of the PIRCA in the eyes of stakeholders throughout Hawai'i, the region and beyond (Section 4.2). An attempt is made to identify additional opportunities to publicize and make use of the PIRCA (Section 4.3) and to synthesize future assessment needs (4.4). The evaluation is summarized in Section 5 and completed with a set of recommendations (Section 6) to the Pacific RISA as it continues its influential work in Hawai'i and the Pacific region.

## **2. Background: The National Climate Assessment**

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The US Global Change Research Act of 1990 requires that a National Climate Assessment (NCA) be undertaken once every four years. In response to this Congressional mandate, a first assessment was published in 2001, a second in 2009, and the third is currently underway, due for release in April 2014. As the greater-than-four-year interim period between assessments makes clear, past approaches to conducting an assessment resulted in a costly and arduous effort to build, dismantle and build again the entire assessment apparatus (a central coordination office, Advisory Committee, author teams, and a wide range of efforts within federal agencies in support of the NCA). Much of the assessment effort has also resulted in only limited awareness among stakeholders, decision-makers and the wider public of the valuable information contained in the assessments.

With the launch of the Third NCA, the National Coordination Office under the leadership of Kathy Jacobs and the National Climate Assessment Development and Advisory Committee (NCADAC)<sup>1</sup> decided

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<sup>1</sup> The author of this report is a member of the federal advisory committee (NCADAC), a member of its Executive Secretariat, the co-chair of the NCADAC Engagement and Communications Working Group, and a

to use a different approach than in previous assessments. The goal – and guiding philosophy throughout the development of the Third NCA – has been to establish a sustained assessment capacity across the country (Buizer et al. 2013). The approach is characterized by openness and transparency, extensive opportunity for interactive involvement of a broad set of stakeholders and interested experts in the NCADAC, the author teams, an associated network of stakeholders called NCAnet, as well as the development of stable, ongoing assessment activities and capacity across the nation. Participants contribute to this ongoing effort through a variety of mechanisms, such as providing technical input, assisting in regional town halls and outreach events, public review of assessment products, development of indicators and underlying scenarios, and ongoing input and outreach to help shape future assessment direction and to ensure that assessment products reach intended audiences across the country.

Through a Federal Register Notice on July 13, 2011 (*Federal Register*, Vol. 76, No. 134), a request for technical information was sent out to all interested experts and stakeholders to provide input into the NCA. In addition, upon request by the NCA, federal agencies coalesced resources to develop technical input reports (TIRs) on specific sectors and regions. NOAA, for example, provided a limited amount of additional resources to its regional RISA teams (as well as to other parts of NOAA for other TIRs) to enable them to play lead roles in developing regional assessments as technical input into the NCA. Together with other regional partners (some with additional resources from their parent federal agencies, others without any additional means), the RISA teams thus became central leads in developing the eight regional TIRs.

Such is the case with the PIRCA. As described on the PIRCA website:

Together over 100 scientific experts and practitioners contributed to the 2012 PIRCA, an integrated report that serves as a regional contribution to the Third National Climate Assessment (NCA). The 2012 PIRCA examines climate change impacts in Hawai'i and the USAPI [US-Affiliated Pacific Islands] and also assesses the adaptive capacity of Pacific Island communities. Primary responsibility for the PIRCA is shared by the Pacific Regional Integrated Sciences and Assessments (RISA) program, funded by the US National Oceanic and Atmospheric Administration (NOAA) and supported through the East-West Center; NOAA's National Environmental Satellite, Data, and Information Service (NESDIS) National Climatic Data Center (NCDC); Pacific Climate Information System (PaCIS); and the Pacific Islands Climate Change Cooperative (PICCC), funded by the Department of Interior's US Fish and Wildlife Service, National Park Service, and US Geological Survey.

(Source: <http://www.pacificrisa.org/projects/pirca/>)

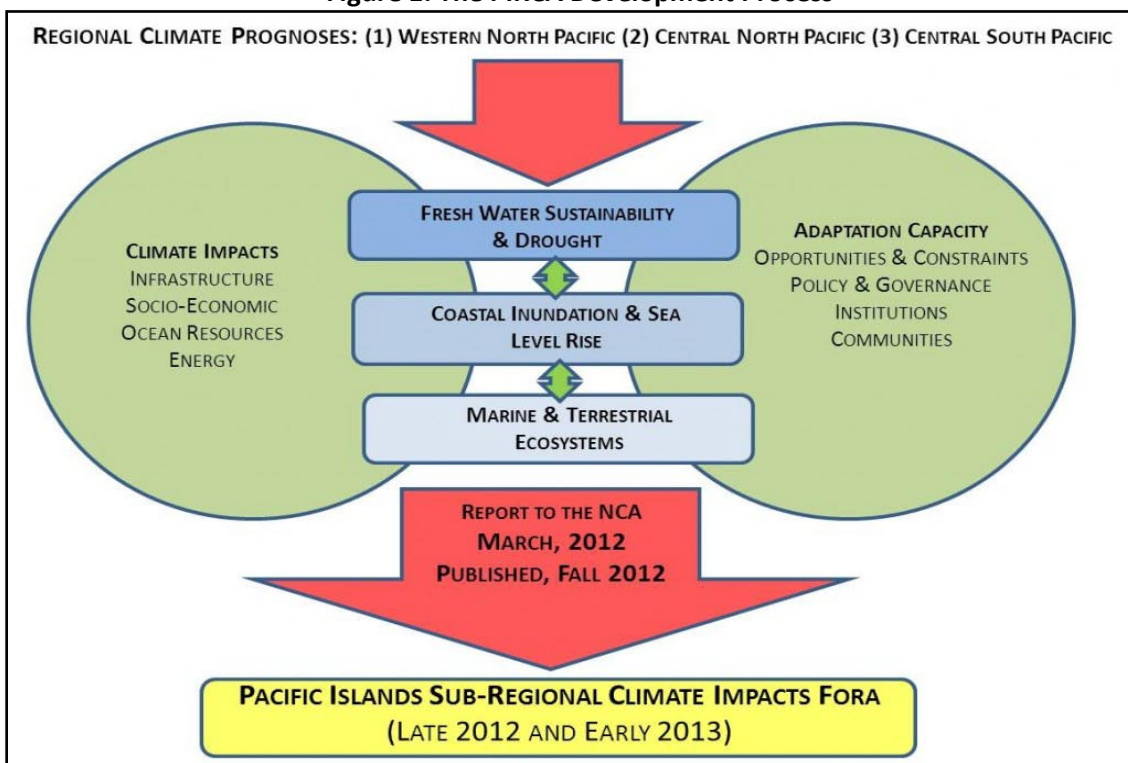
In developing the PIRCA, its leaders convened three technical workshops between November 2011 and January 2012 to scope, develop and review initial drafts of the regional assessment. The report was submitted to the NCA in mid-2012 and officially released in the region in early December 2012. Two public forums were held – in Honolulu and on Fiji – to present its findings and to engage in further dialogue with stakeholders to "facilitate sharing, analyzing, and reporting on scientific consensus, knowledge gaps, sectoral needs, and adaptive capacity for addressing the changing climate" (see: <http://www.pacificrisa.org/projects/pirca/>, Figure 1). Press work, briefings to particular stakeholders at the local, state and federal/Congressional level, and presentations at workshops and meetings followed the initial release. This outreach continues opportunistically to this day, and further opportunities are likely to arise, as this evaluation will show. The purpose of this evaluation is to see how far and wide these efforts have reached, and what impacts on policy and practice they may have had.

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Convening Lead Author on the NCA's Coastal Chapter. She also contributed to the Special Report on the Sustained Assessment (Buizer et al. 2013) and to the Southwest Regional Climate Assessment (Garfin et al. 2013). She did not contribute in any way to the PIRCA report or related outreach activities.



**Figure 1: The PIRCA Development Process**



(Source: PIRCA website at: <http://www.pacificrisa.org/projects/pirca/>)

### 3. Data and Methods

The evaluation of the Pacific RISA's work around the PIRCA is based on several sources of data. It uses a multi-method approach to obtain as diverse, complete, and in-depth a picture as possible of the impact the PIRCA has had to date in the region and beyond. Table 1 provides an overview of the data sources and methods used, as well as the insights gained from each. Additional information on the data collection and analysis is provided for each below.

**Table 1: Data, Methods and Expected Insights for the PIRCA Evaluation**

Data	Method or Approach	Potential Insights and Benefits
<b>Media records (print media, TV, radio mentions) collected via Lexis-Nexus</b>	Quantitative and qualitative (descriptive) analysis	<ul style="list-style-type: none"> <li>• Quantified information on geographic spread, coverage</li> <li>• Quality and type of coverage</li> <li>• Focus of topical coverage by geography</li> <li>• Comparison with other regional assessment efforts involved in NCA (data available from the NCA Outreach Coordinator, E. Cloyd)</li> </ul>

<p><b>Online postings and links to PIRCA at websites other than Pacific RISA; downloads from Pacific RISA website</b></p>	<p>Quantitative and qualitative analysis</p>	<ul style="list-style-type: none"> <li>• Quantified information on geographic spread and reach of different types of stakeholders</li> <li>• Quantitative sense of interest in PIRCA information</li> </ul>
<p><b>Conference evaluations (Fiji and Honolulu)</b></p>	<p>Qualitative analysis and synthesis of participant evaluation</p>	<ul style="list-style-type: none"> <li>• Expressions of interest in, usefulness of PIRCA release events</li> <li>• Other relevant insights from stakeholders</li> </ul>
<p><b>Survey of the RISA stakeholder network</b></p>	<p>Online survey (using survey gizmo)</p> <p>Quantitative analysis of survey responses</p> <p>Survey population includes</p> <ol style="list-style-type: none"> <li>1. PIRCA collaborators</li> <li>2. PIRCA mailing list</li> <li>3. Additional individuals not included in 1. or 2.</li> </ol>	<ul style="list-style-type: none"> <li>• Indications of how PIRCA was received, what aspects of it were of greatest interest to stakeholders, in what ways the information is useful/used</li> <li>• Indications of communication pathways</li> <li>• Indications of perceived credibility, gaps/completeness</li> </ul>
<p><b>Interviews of individuals in influential positions (known to have received the report)</b></p>	<p>Qualitative analysis of recorded telephone interviews with key informants</p> <p>Names of potential interviewees provided by Melissa Finucane and Victoria Keener</p>	<ul style="list-style-type: none"> <li>• In-depth indication of how the PIRCA was received, what aspects of it were of greatest interest to stakeholders, in what ways the information is useful/used</li> <li>• Perceptions of credibility</li> <li>• Identification of future information needs, ways to improve future assessments</li> </ul>

### Media Analysis

A Lexis-Nexus search was conducted (search period: July 2011-September 2013), using the search terms "PIRCA" and "Pacific Islands Regional Climate Assessment" for all unique press hits. A total of 24 media records were collected through this search. An additional 9 media hits were obtained from news tracking through November 2013 by the Pacific RISA (archived at <http://www.pacificrisa.org/media/>)

and from Emily Cloyd, the National Climate Assessment's Communication and Engagement Coordinator, who is tracking press coverage for the NCA more generally on an ongoing basis. The total list of 33 press hits with url links, where available, is included as Appendix A.

The ongoing tracking of press coverage of all national assessment-related press coverage made it possible to compare the amount of press coverage for the PIRCA to that of other regional and sectoral technical input reports (TIRs). A total of 14 regional and sectoral TIRs have received media attention (the eight regions delineated for the Third NCA, as well as six sectoral or cross-cutting TIRs). Available information about the place of coverage allowed for an assessment of geographic coverage, but size of potential and actually reached audiences is impossible to assess. Only qualitative content analysis was undertaken.

### Website Postings

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In addition to identifying press and media coverage, a web search was conducted for unique mentions or listings of the PIRCA in order to assess the ways in which the PIRCA has spread as an information source on climate change impacts, vulnerabilities and adaptive capacities across the Pacific region. This search – conducted over the same search period as the media analysis – resulted in 9 independent websites listing the PIRCA as a resource in addition to the (original) main site for it on the RISA webpage. Some of these have national, others regional and specific audiences, while – of course – being accessible nationally and internationally via a simple Google search. Information on report downloads could be obtained from the web managers of the cakex website, providing a quantitative sense of the level of interest in the overall report and its component parts. Appendix B lists these sites with their respective urls.

### Public Forums

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In addition to the press release in early December 2012, the PIRCA was formally introduced to the public and interested stakeholders at two forums. One, on December 10-11, 2012 took place at the East-West Center in Honolulu, HI (the "Pacific Islands Regional Climate Forum"; see: <http://www.pacificrisa.org/projects/pirca/climate-fora/>). It brought together more than 200 scientists, decision-makers, and other stakeholders and interested members of the public to learn about and discuss the findings of the PIRCA (Figure 2). Then- Lt. Governor Brian Schatz, a champion for climate change action, gave the opening keynote address.

**Figure 2: PIRCA Forum, East-West-Center, Honolulu. More than 200 scientists, decision-makers and interested members of the public attended the event.**



(Photo: Pacific RISA at: <http://www.pacificrisa.org/projects/pirca/climate-fora/>)

A second forum on the PIRCA was held January 21-25, 2013 at the University of the South Pacific's Laucala Campus in Suva, Fiji, during the Pacific Islands Climate Services Forum (see: <http://www.pacificcis.org/picsf/>). The event was hosted by the Pacific Centre for Environment and Sustainable Development (PACE-SD) and the Pacific Climate Information System (PaCIS), with support from the National Oceanic and Atmospheric Administration (NOAA) through the US Agency for International Development (USAID). About 180 individuals attended this event (Figure 3).

**Figure 3: PIRCA Forum, Suva, Fiji**



(Photo: Melissa Finucane)

At each of the public forums, participants were asked to fill out evaluation forms at the end of the events. Only a subset of individuals completed these brief evaluation forms (Honolulu, n=88 or ca. 44% of attendees; Fiji, n=72 or ca. 40% of attendees). The evaluation forms asked participants to assess the overall satisfaction with the event, how well event-specific objectives were met, as well as how effective the facilitation and discussions in specific break-out sessions were. Spreadsheets with tabulated evaluation results, as well as additional verbal comments provided by participants were made available to the evaluator by Pacific RISA staff. They are quantitatively and qualitatively analyzed in this evaluation.

### Survey

Several months after the PIRCA release and these public forums, i.e. after people have had some time to absorb its contents and potentially begin to make use of its contents in policy and practice, a survey of Pacific RISA stakeholders (identified by Victoria Keener and Melissa Finucane) was conducted to assess its perceived credibility and usefulness to potential PIRCA "consumers."

The survey instrument (available in Appendix C) was drafted by the author, reviewed by Pacific RISA staff, and refined based on the comments received. With the help of Melissa Finucane, the survey instrument was also reviewed by the IRB of the East-West Center and approved for use. Once prepared as a web-based survey (using Survey Gizmo) and tested for functionality by Pacific RISA staff (Krista Jaspers, Victoria Keener and Melissa Finucane), the survey notice was emailed to 183 individuals on October 24, 2012. Two reminder notices on October 31 and November 4, as well as follow-up phone calls on November 8 and 12, resulted in a total of 53 fully completed surveys and 13 partially completed surveys, for a combined response rate of 36.1%. The survey closed on November 13.

Based on industry standards for online surveys, a response rate of no more than 25% is quite common (Hamilton 2009) and considered adequate (Visser et al. 1996; Holbrook et al. 2007). The higher response rate achieved here should thus be viewed as a positive result, giving confidence in the results; it may in and of itself be an indication of a positive rapport between the Pacific RISA and its stakeholders.

## Interviews

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In addition to the survey, key informant interviews were conducted in September and October 2013 with 14 individuals identified by Pacific RISA staff or by recommendation of other interviewees. They included individuals that were either involved in the development and review of the PIRCA report, participated in one of the PIRCA forums, or received a briefing on the PIRCA findings. A list of interviewees with their affiliations is available in Appendix D (note that this list is slightly shorter than the names of potential interviewees provided by the Pacific RISA because feasible times for interviews with these individuals could not be found).

The interview protocol (Appendix E) was developed by the author, reviewed by Pacific RISA staff, and refined based on the feedback received. With the help of Melissa Finucane, the protocol was also reviewed by the IRB of the East-West Center and approved for use.

Interviews lasted on average 37 minutes (ranging from 13-63 minutes), were taped to ensure that interviewee quotes could be adequately cited, and detailed notes were taken during each call to capture key information. Qualitative analysis was used to extract relevant information for this evaluation.

Several interviewees provided additional written documents or information after the interview – follow-ups that emerged opportunistically from the interviews. This information provides additional documentation of impact.

## 4. Findings

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### 4.1 Outputs: Delivery and Deliverables

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#### The PIRCA Report, Associated Documents and Derivative Products

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As of this date, the main outputs or deliverables of the Pacific Regional Assessment include three reports, designed to be recognizable as "sister" reports, and as part of the larger suite of regional assessments published by Island Press for the NCA (Figure 5). A 2-page flyer on the PIRCA, and various PowerPoint presentations derived from the PIRCA report contents are also available, some of which are posted at other websites on the internet. All primary deliverables, including a list of corrections, are conveniently available from the Pacific RISA website (<http://www.pacificrisa.org/projects/pirca/report-materials/>).

Based on information obtained from the web managers of the cakex website, which lists the PIRCA and other regional and sectoral technical input reports for the NCA, the report has enjoyed significant interest (outputs listed in descending order):

- FULL REPORT: **1,347 visits**
- CASE STUDIES: **316 visits**
- CAKE Case Study (PROJECT OVERVIEW): **263 visits**
- EXECUTIVE SUMMARY: **256 visits**

While comparative data for other technical input reports and a month to month break-down of these numbers were not available, peak months for site visits included December 2012, January 2013, and July 2013. The first two of these, of course, are the time of the initial report release and the Honolulu PIRCA Forum, while the July peak does not correlate with any particular outreach event.

Importantly, these outputs can be discovered not just from the Pacific RISA website or the cakex website but via a number of access points, i.e., they are "findable" from various sources, including by individuals not familiar with the Pacific RISA or its closest PIRCA partners per se (see Appendix B). The most notable are listed in Table 2.

**Figure 5: The Major Outputs of the Pacific Regional Assessment: Detailed Report, Executive Summary and Case Studies**



(Source: Report Covers from Island Press)

**Table 2: Web Access to the PIRCA Report Through Various Sources**

Web Portal/Source	Link	Audience
Pacific RISA	<a href="http://www.pacificrisa.org/projects/pirca/">http://www.pacificrisa.org/projects/pirca/</a>	Stakeholders in Hawai'i, Pacific Region
PaCIS	<a href="http://www.pacificcis.org/">http://www.pacificcis.org/</a> (direct link to report & to <a href="http://www.PacificIslandsClimate.org">www.PacificIslandsClimate.org</a> )	Stakeholders in Hawai'i, Pacific Region
LAMA (Loli Aniau, Maka'ala Aniau)	<a href="http://www.islandclimate.net/">http://www.islandclimate.net/</a>	Stakeholders in Hawai'i, Pacific Region
PacificIslandParks.com	<a href="http://pacificislandparks.com/">http://pacificislandparks.com/</a>	Stakeholders in Hawai'i, Pacific Region
PacificIslandsClimate.org	<a href="http://www.pacificislandsclimate.org/asmts/">http://www.pacificislandsclimate.org/asmts/</a>	Stakeholders in Hawai'i, Pacific Region
UH Library	<a href="http://scholarspace.manoa.hawaii.edu/">http://scholarspace.manoa.hawaii.edu/</a>	Scholars and students (primarily in Hawai'i)
USGCRP	<a href="http://www.Globalchange.gov">www.Globalchange.gov</a>	US-wide stakeholders, decision-makers, scholars
NOAA	<a href="http://www.Climate.gov">www.Climate.gov</a>	US-wide stakeholders, decision-makers, scholars
Island Press	<a href="http://islandpress.org/">http://islandpress.org/</a>	National and global readership
Cakex	<a href="http://www.cakex.org/">http://www.cakex.org/</a>	Particularly NGOs and decision-makers, US-wide

Five of these offer direct access to stakeholders at well known climate-related sources, i.e., "the" go-to places for climate information, in the Pacific region. Other report repositories offer access points for non-regional, US or international audiences; as well as for academic, NGO or decision-maker audiences.

Importantly, the Pacific RISA website is the only website that provides extensive explanation and background on the PIRCA – the process of its development, background on participants involved, related outreach and media efforts, and its fit with the National Climate Assessment. The PaCIS website lists the PIRCA and the two public forums on its front page (J. Marra of the PaCIS was a co-lead convener), but offers no further background; and the PICCC, with D. Spooner as the third co-lead on the report, does not list the PIRCA report or related efforts at all on its website. This makes the Pacific RISA the most important site for background information on the PIRCA and related assessment process.

In addition to listing where the PIRCA report can be found, it is also useful to identify places where it is not, but maybe should be. A partial review of PIRCA partner websites suggests that few if any of them list the PIRCA report as a resource anywhere on their sites (e.g., PRiMO, PICCC, Center for Island Climate Adaptation and Policy). Maybe most notably missing is a listing of the PIRCA report on the Secretariat of the Pacific Regional Environment Programme (SPREP) website, in particular in its Pacific Environment Information Network Directory of Country Reports (<http://www.sprep.org/Pacific-Environment-Information-Network/country-profiles-directory>). SPREP serves important roles in international climate, hazards, and environmental policy-making across the region and globally, and thus is an important go-to place for many stakeholders and policy-makers (or their staff) across the Pacific region. While the PIRCA regional scope is smaller than that of SPREP, there are overlaps and PIRCA offers more recent information for those areas. The Pacific RISA may consider scanning for other "go-to" places it considers important and urge web hosts to link to the report.

### PIRCA-Related Press Coverage and Internet Links

The primary PIRCA press coverage was consistently content-based, covering all aspects of the PIRCA or focused on PIRCA public forum events, and neutral in tone. Subsequent press included several items either appreciative in tone or urging climate action. Of the 33 unique press hits identified through the Lexis-Nexus search and additional news tracking by NCA and the Pacific RISA, 6 were press releases, 8 news wire articles, 4 local newspaper articles (including an op-ed and an LTE), 1 weekly magazine cover story, 10 blog entries, 2 web-based announcements of PIRCA-related events, and 2 TV appearances, including a one hour-long PBS forum, which featured Victoria Keener, the PIRCA report findings and the Fiji Public Forum. Importantly, only 7 of the news hits found are self-generated ("owned media") either by the Pacific RISA (mostly blogs) or by the East-West Center, where the Pacific RISA is housed. Differently put, nearly 80% of the news coverage achieved for the PIRCA report and related events is by others picking up or responding to a newsworthy publication ("earned media"). The more recent Pacific RISA-generated blogs serve the important function of keeping the PIRCA "on the front burner" – at least for those receiving and reading the RISA news blog.

Based on primary audiences addressed through these news outlets, the coverage of the PIRCA report reached first and foremost Hawaiian audiences (20 items), Pacific regional audiences (12 items), but also generalized U.S. mainland audiences (7 items), and Washington, DC/Congressional audiences (3 items).<sup>2</sup> The coverage occurred over less than a year, thus providing repeat reminders of climate change across Hawai'i and the Pacific region, and of the PIRCA report as a reliable information source on the topic.

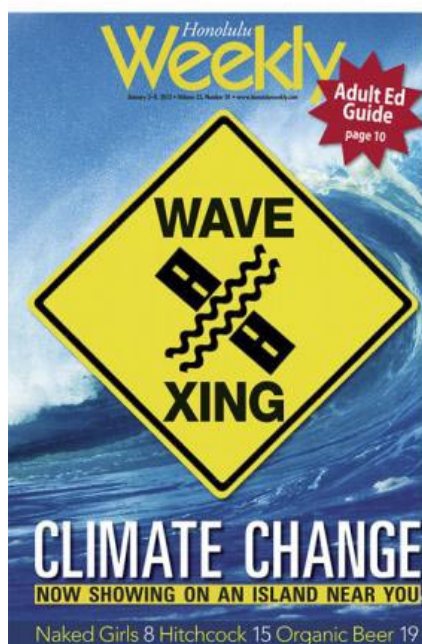
Several findings on the news coverage of the PIRCA are noteworthy. First, of the 33 news items, the vast majority mention the Pacific RISA or quote its staff specifically; far fewer mention some of the other

<sup>2</sup> These numbers do not add up to 33 because some news items reach more than one audience.

non-RISA lead editors (John Marra, Deanna Spooner). This suggests that the majority of the news coverage is actually a result of the active press work of the Pacific RISA and the Pacific RISA is a sought-after source of expertise for reporters.

Second, several instances of the "earned" publicity is notable for generating in-depth or political engagement with the topic of climate change. Notably, none of it was polarized or controversial.<sup>3</sup> For example, the hour-long PBS feature allowed extended discussion of both the science of climate change (with Victoria Keener and University of Hawai'i coastal expert, Chip Fletcher) and the implications for practice (with William Aila, Chairperson of the Department of Land and Natural Resources, and Stanton Enomoto, PICCC). The *Honolulu Weekly* cover story also went at length into the local implications of the PIRCA findings (Figure 6).

**Figure 6: Climate change cover story in January 2013 in the Honolulu Weekly was based on the PIRCA findings and interviews with PIRCA contributors.**



(Source: Honolulu Weekly)

Similarly, a widely publicized ad campaign by the League of Women Voters (LWV) following the PIRCA release directed its appeal for political action on climate change at President Obama, vacationing in his home state Hawai'i over the 2012/2013 Christmas holiday break. The ad, appearing in Hawaii's main paper, the *Honolulu Star-Advertiser*, appealed to Obama's origins and legacy and pointed specifically to the findings of the PIRCA report (Figure 7). It also ran just days after the draft national assessment report was released for public comment. Together, the national report, the LWV ad directed at the President, and the previously released regional report thus received nationwide coverage (4 unique press hits for Hawaiian and US mainland/Washington audiences).

<sup>3</sup> Online comments from newspaper readers at the *Honolulu Star-Advertiser* or *Honolulu Weekly* could not be accessed without subscription. Thus it is not known whether climate-skeptical comments were made in response to any of those articles, the op-ed or the LTE.



**Figure 7: League of Women Voters' Ad in the Honolulu Star-Advertiser points directly to the PIRCA report findings.**

**Mr. President,  
your legacy is calling.**

The 'aina is part of our legacy, Mr. President, and yours. Climate change poses the greatest environmental challenge of our time. A recent report by the Pacific Islands Regional Climate Assessment (PIRCA) makes clear that the fish in our waters and the wildlife habitats in our highlands are threatened. Climate change endangers our very way of life.

As you have said, "We want our children to live in an America that isn't ... threatened by the destructive powers of a warming planet." If we fail to act, rising sea levels, super storms and droughts will forever change these islands, our nation and the world.

Mr. President, your legacy is our future. As you return to Washington, please use the authority you have as president to set standards for new and existing power plants under the Clean Air Act and protect our world. Please do what is pono.

**LWV** LEAGUE OF  
WOMEN VOTERS®

(Source: Ad reproduced in <http://www.usnews.com/news/blogs/washington-whispers/2013/01/04/full-page-ad-to-appear-in-hawaiian-newspaper-pressuring-obama-on-climate-change>)

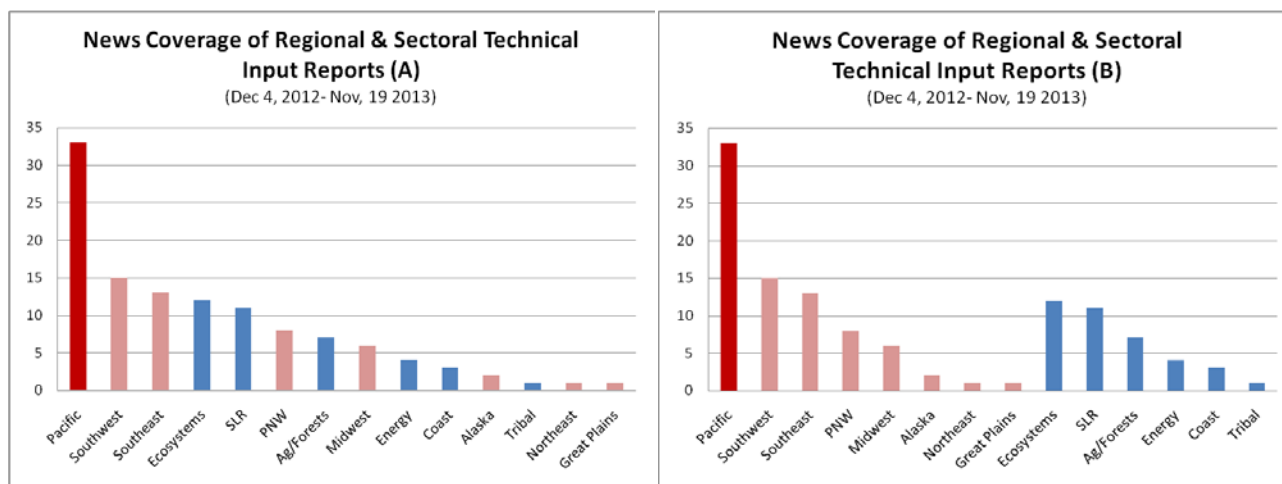
Finally, the availability of data on news coverage of other technical input reports (TIRs, i.e., regional and sectoral assessments) allows for comparison of the success of the PIRCA press outreach with that around other technical inputs released over the past year. At first glance (Figure 8), the PIRCA report press coverage is impressive and unmatched by any of the other TIRs. Whether this is truly so, however, must be carefully assessed.

Because the PIRCA report was the first TIR to be released to the public, and comprehensive and careful tracking was not yet fully established by Emily Cloyd, only 2 news items on the PIRCA were included in her master list. The systematic Lexis-Nexus search unearthed many more, but by itself was also not complete. Several of the items found on the PIRCA media archive, for example, were not captured by Lexis-Nexus because they consisted of coverage in an outlet not tracked by that service or

because they were blog entries. This suggests that through careful search of records through a variety of channels, a more complete list could be obtained for all TIRs. To my knowledge, such a more detailed analysis and evaluation of media outreach has not been undertaken for any of the other TIRs to date, other than the central tracking by Emily Cloyd. Thus, there is a possibility of under-reporting on the other reports, particularly some of the earlier ones.

However, even if a 100% margin of error was granted to any of the other reports (i.e., a possible doubling of media hits for those other reports), the PIRCA news coverage would still be better than that for the next highest contender (the Southwest Regional Impacts Report), and – with a growing margin – better than for any other regional (pink bars in Figure 8), or sectoral assessment (blue bars in Figure 8).

**Figure 8: Comparison of News Coverage for Technical Input Reports: Comparison of (A) All Reports and (B) Regional and Sectoral Reports, in Descending Order**



(Source: Based on the combined data of tracked news by E. Cloyd and S. Moser for the PIRCA)

This adds weight to the earlier conclusion that the exceptional media coverage for the PIRCA is due to the active press work by the Pacific RISA staff. A comparison with all climate coverage in Hawai'i, the Pacific region or even beyond is not feasible and nonsensical, but with reference to the entire NCA-related news coverage to date, the PIRCA generated nearly 5% of it alone – a substantial fraction!

### PIRCA-Related Outreach Activities

The Pacific RISA held three expert workshops to help scope the Pacific regional impacts assessment. Each was focused on one of the key themes of the report (for detailed background, agendas and participant lists, see: <http://www.pacificrisa.org/projects/pirca/consensus-meeting/>). A total of 104 unique participants from Hawaiian, Pacific regional, and US mainland institutions participated in these "consensus" scoping workshops.

- Freshwater & Drought Workshop, November 17, 2011, East-West Center in Honolulu (34 participants)
- Sea Level Rise & Coastal Inundation Workshop, January 10-11, 2012, East-West Center in Honolulu, convener NOAA (45 participants)
- Ecosystems Workshop, January 18-19, 2012, East-West Center in Honolulu, co-convener Pacific Islands Climate Change Cooperative (PICCC) (35 participants)

While several interviewees appreciatively mentioned that they had been invited to these early scoping workshops, one interviewee specifically commented on how much he valued the transparency of the process of posting the workshop agendas and lists of participants on the PIRCA website, and how it appeared that "all the right folks" were at these scoping workshops.

Upon completion of the report, the PIRCA was publicly released at a Forum in Honolulu on December 10-12, 2012. The Forum was organized and sponsored by the Pacific RISA, PICCC, the US Fish and Wildlife Service's Pacific Islands Fish & Wildlife Office, the USGS Pacific Islands Climate Science Center, and NOAA NESDIS NCEP Regional Climate Services Center (detailed information on the event is available at: <http://www.pacificrisa.org/projects/pirca/climate-fora/>). The public portion of the event (December 10) was attended by 200 individuals, who engaged in dialogue with climate experts and sector leaders from across Hawai'i and the Pacific region. Then-Lieutenant Governor of Hawai'i, Brian Schatz, offered opening remarks. The following day was a regional town hall, similar to others held across different regions of the US, to bring attention to the *national* climate assessment, for which a draft had just been released. The purpose of the town hall was to bring attention to that document, widely publicize the opportunity to comment on it, and to solicit input into the development of a sustained assessment process. These discussions continued through December 12, with a particular focus on how to continue the production of policy-relevant science for Hawaiian and Pacific regional decision-makers.

A second subregional public forum was held on Fiji in association with the Pacific Islands Climate Services Forum on January 21-25, 2013 (details available at: <http://www.pacificcis.org/picsf/>). In addition to presenting overarching findings of the PIRCA, the specific purpose was to explore how to make scientific findings such as from an assessment more accessible and useful to decision-makers across the region. The meeting including opening remarks from Fiji's Minister for Local Government, Urban Development, Housing and the Environment and had broad participation from across the Pacific region (Micronesia [Kiribati, Nauru, Palau, FSM, RMI, CNMI, Guam], Polynesia [Niue, Samoa, American Samoa, Cook Islands, Tonga, Tuvalu], and Melanesia [Fiji, Timor-Leste, Vanuatu, Solomon Islands, PNG]), including non-US affiliated island states (Indonesia, Thailand, Australia, New Zealand etc.).

In addition to these public forums, the Pacific RISA offered briefings on the PIRCA at three meetings, the Pacific Risk Management 'Ohana (PRiMO) conference in Honolulu on March 13, 2013 and, a week later on March 20, 2013, in a briefing to Hawaii's Commission on Water Resources Management in Honolulu. In September 2013, M. Finucane and V. Keener presented the PIRCA at a Congressional briefing organized by Senator Brian Schatz in Washington, DC to 25-30 staffers there (Figure 9).

**Figure 9: Senator Brian Schatz at the Congressional PIRCA briefing in September 2013.**



(Source: Office of Senator Brian Schatz)

Finally, Pacific RISA staff have given brief presentations (or mentions of the PIRCA within otherwise-focused presentations) at various conferences in 2013.<sup>4</sup> As findings from the survey and interviews will show, these presentations and briefings were extremely well received and brought the PIRCA findings alive to decision-makers. A variety of opportunities exist to continue this important outreach work.

## 4.2 Outcomes and Impact

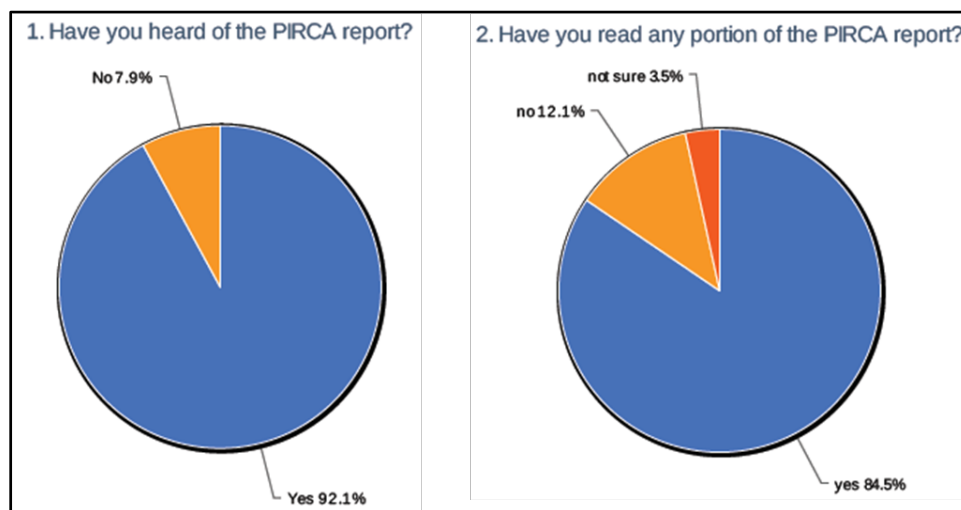
### Awareness of the PIRCA in Hawai'i, the Pacific Region and Beyond

To assess the degree of awareness of the PIRCA in Hawai'i and the Pacific region, a survey of the general public would be ideal as it might reveal whether the extensive press work has reached the population. Such a broad survey was not undertaken, so that it is difficult to assess whether and to what degree the PIRCA has raised awareness, understanding and concern about climate change risks in Hawai'i and across the region. However, if there is any region (of the 8 NCA regions) that might have heard about the NCA and the regional assessment of climate change risks in particular, it would be Hawai'i and the Pacific region, given the exceptional and unmatched press work there.

What can be said, with some confidence, however, is that the expert community, stakeholders and decision-makers in the three core subject areas of the PIRCA report (sea-level rise, water resources and ecosystems) are well aware of the assessment. This conclusion stems from several lines of evidence:

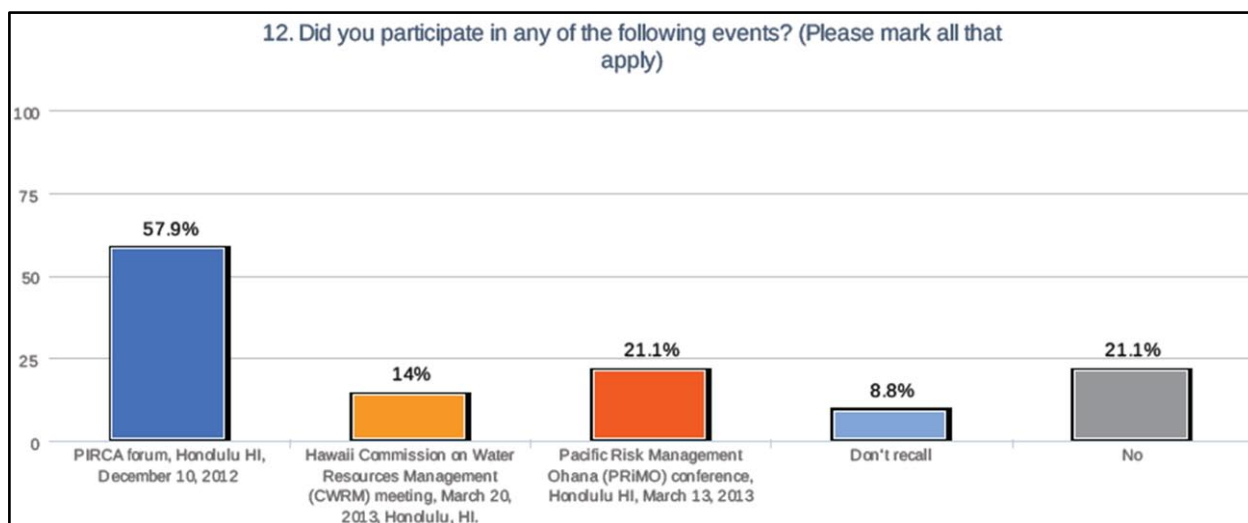
- (1) The development, writing and review of the report involved more than 100 experts – essentially the "who-is-who" in relevant areas of expertise – in Hawai'i and across the region.
- (2) Additional experts and stakeholders attended one or more of the two public forums or briefings (there is some overlap in the list of forum participants and report authors but also a significant difference, suggesting a broader audience than the "inner circle" has been reached).
- (3) The survey of Pacific RISA stakeholders conducted for this evaluation revealed that 92% of respondents had heard of the RISA and nearly 85% read some portion of it (Figure 10). Many of these respondents were not involved in the PIRCA's development, but attended a PIRCA-related event or received a briefing (Figure 11), or heard about it from a colleague, the Pacific RISA, another PIRCA partner, or through TV (Figure 12).

**Figure 10: Awareness and Consumption of the PIRCA Report Among Survey Respondents**

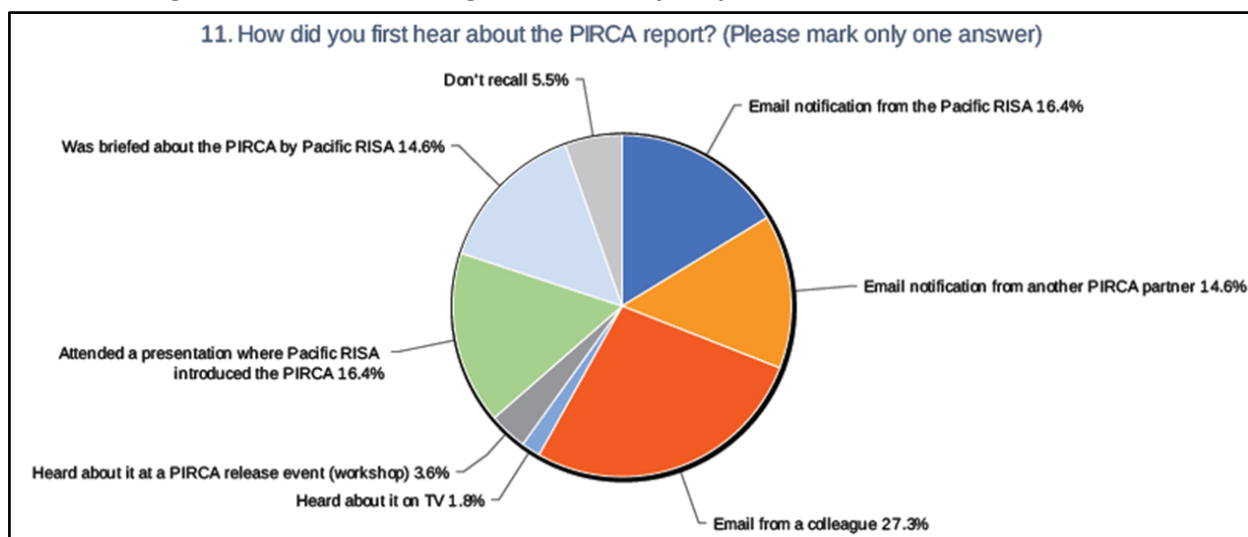


<sup>4</sup> Other PIRCA partners and contributors may have done the same at other opportunities. This could not be assessed for this evaluation, but, of course, would broaden the visibility and potential impact of the assessment.

**Figure 11: Survey Respondents' Participation in PIRCA Outreach Events**



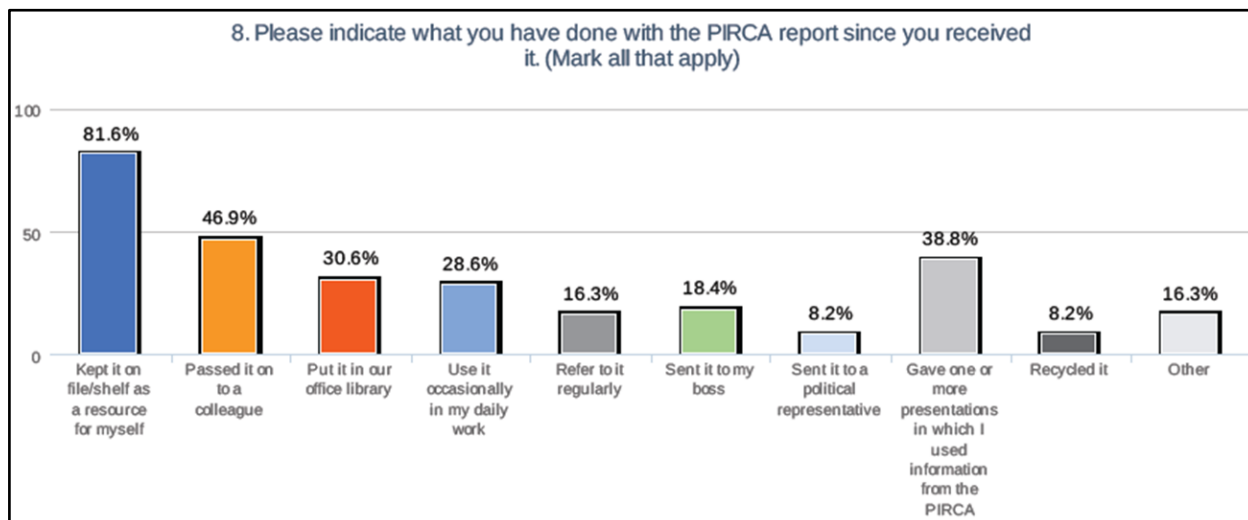
**Figure 12: Channels Through Which Survey Respondents Heard About the PIRCA**



If one envisions the spread of awareness of the PIRCA as widening circles out from those involved in its creation to those briefed or hearing of it at a public forum, to those even further out hearing it through the press or second hand, then there is a much broader audience that is difficult to pin down, but that is equally hard to refute. Insights gained from the survey and the interviews make this very clear: Survey respondents, when asked what they have done with the PIRCA since receiving it, said they passed it on to a colleague (46.9%), put it in the office library (30.6%), sent it to their boss (18.4%), sent it to a political representative (8.2%), or, importantly, gave a presentation based on it (38.8%) (Figure 13). The personal transmittal or translation of information to audiences who trust the messenger, is among the most effective ways to communicate information. As survey respondents were by majority long-standing employees in their organizations (more than 54% were with their current employer for more than 5 years, and more than 57% worked for more than 5 years on climate change), they are likely to be trusted sources on climate change and on the impacts areas addressed in the PIRCA. Thus, even those in the more distant circles of potential audiences, who heard about the PIRCA via such "two-step

communication" from trustworthy messengers can be expected to now have an awareness of the PIRCA as a valuable and credible resource on climate change.

**Figure 13: Widening Circles of PIRCA Awareness via Survey Respondents**

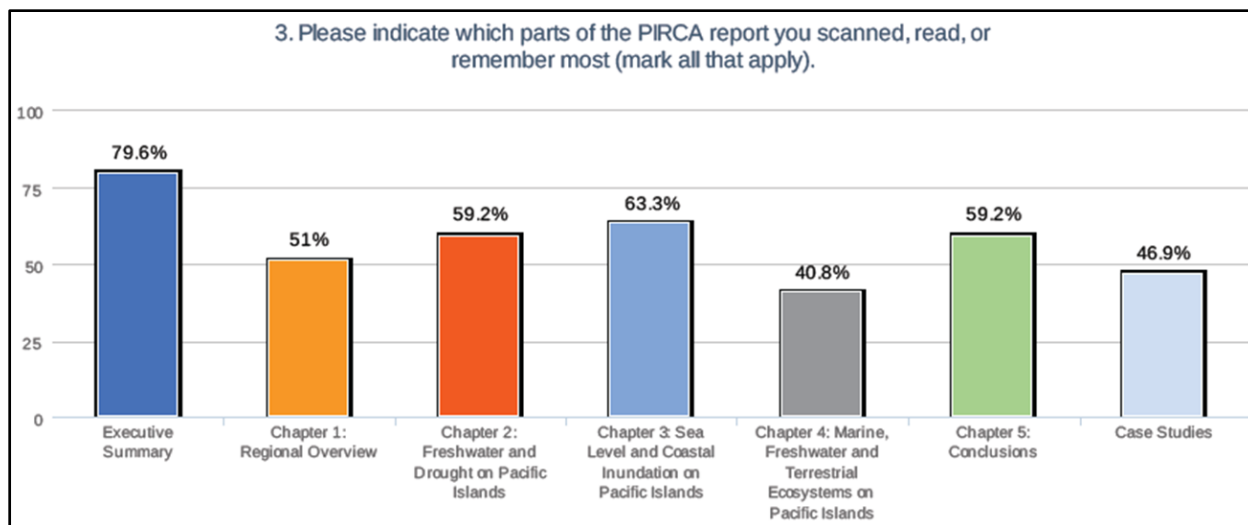


Interviewees, i.e., those key individuals who had the opportunity to participate and play an active role in one of the outreach events, confirmed this. They repeatedly spoke of using the PIRCA in their work and thus bringing it to the attention of their colleagues and stakeholders (staff, elected officials, students, the public). Thus, it is safe to conclude, at least for relevant experts and decision-makers in Hawai'i, that the outreach efforts of the Pacific RISA (and their partners) around the PIRCA succeeded in raising awareness of the report. The evidence base is less strong for the broader Pacific region, as fewer individuals from there responded to the survey and only a few interviewees came from or worked extensively outside Hawai'i. However, the Fiji forum reached a significant number of relevant experts across the region.

Importantly, however, raising awareness of a report, particularly among those more distant from the process, does not equate with in-depth knowledge, and is apparently only an ephemeral success. Using a very generous question, survey respondents – asked whether they had "scanned, read or remembered" any portion of the report – mentioned paying attention particularly to the Executive Summary (nearly 80%), and to a lesser extent to the substantive components of the report: sea-level rise (63%), freshwater (59%) and the concluding chapter (59%), followed by the regional overview (51%), the case studies (47%) and the ecosystems chapter (41%) (Figure 14). About 12% had not read any portion of the report, 3.5% could not remember, and write-in responses hinted at a limited recall among some respondents as well: "report came out over a year ago, so this is not really fresh in my mind."

Significantly, almost all interviews confirmed this: except for those who were briefed on the report very recently (within the last 2 months), the report contents had faded somewhat from memory, people did not recall what specifically they had read of it. In a world of information overload and consequent shallow information processing, this is hardly surprising. One only needs to remember the resource and where one has placed it: on one's bookshelf, or in a clearly identified email folder. This hints at both a need and an opportunity, one that will be confirmed even more clearly in the next section on the perceived "usefulness" of the PIRCA: there is a market for refreshing people's memory, i.e., for bringing the report back to people's attention, particularly if value can be added through new research, localized context, or through the way the PIRCA information is presented.

**Figure 14: PIRCA Components Read, Scanned or Remembered by Survey Respondents**



### Perceived Usefulness of the PIRCA by Stakeholders

#### The PIRCA Report

"Usefulness" of scientific information is a broad term that can involve a number of sub-concepts, and – more importantly – is often interpreted by both providers and potential users of information in different ways. A variety of related concepts and questions thus were included in the survey and in the interviews.

In one question, survey respondents who read (portions of) the report, were asked to indicate how *interesting* they found what they read. Almost across the board (except for Chapter 4 on ecosystems), the various sections of the report received a majority of votes for "extremely interesting." The Executive Summary – the most widely read portion of the report, summarizing key findings from all chapters, was perceived – by far – as the most interesting part of the report, an indication of how well it captured and presented the take-home messages of the assessment. The report *as a whole* also received very high marks in terms of how interesting it was to the readers. Confirming this is the fact that a very small number of report readers thought it was "not very" or "not at all" interesting. Those report sections receiving lower marks were also generally less well recalled (Table 3).

When asked specifically how *useful* survey respondents found the report, the pattern is almost identical, except that percentages generally shifted down somewhat. The report as a whole was perceived as more useful than any one of its parts, including the Executive Summary, a greater number of respondents found it "somewhat useful" and a few more (than was the case for interest) found it not very or not at all useful. Again, lower recall correlated with lower percentages for usefulness (Table 4). The overall message, however is that the report as a whole is a very useful document to stakeholders.

How so? This can be discerned from the responses to the question in what ways the report was "somewhat" or "very" useful to respondents. Of the 40 write-in answers received, the following phrases appeared repeatedly, and they are grouped into a number of categories suggesting what "useful" means to these stakeholders:

- **One-stop-shop:** "Excellent summary", "very good compilation of information", "synthesized the most relevant and recent information", "comprehensive oversight", "all this info for the Pacific region in one place", "good starting place", "quick overview"

- **Staying current:** "Getting a grasp on the latest science", "to keep up with what's going on", "understanding status of climate and projected changes", "updated reviews"
- **Credible source:** "Essential reference", "the go to reference", "vitaly important .... to know"
- **Regional differentiation and specificity:** "Regional descriptions are useful", "clear understanding of regional distinguishing characteristics", "all this info for the Pacific region in one place", "summarized information and provided details", "case studies bring the messages alive"
- **Critical knowledge assessment:** "Summarized the scientific consensus", "getting a grasp on the latest science and its implications"
- **Research agenda-setting:** "Relevant to current research and course development"; "helped identify where information was lacking and what types of studies were needed", "set a baseline of knowledge ... to build on"
- **Informing planning and action:** "Provided a framework for possible management responses", "use results ... to plan and execute my responsibilities", "helps to justify programs and initiatives"
- **Accessibility to non-experts:** "Distilled for quick understanding", "language that can be used by decision-makers", "case studies provide useful examples of successes", "pretty", "colorful", "useful communication tools"

Similar sentiments were expressed by interviewees, all of which could easily be matched with the categories of comments from the survey:

- "The science is very important to us as a broad base for planning."
- "It's a terrific document that gives a broad overview on potential impacts, indicators."
- "It informs our management priority areas and gives us some ideas for actions we can take."
- "It confirms what we already knew, but now we have a better justification for our plans and decisions."
- "There are so many studies, but we're not sure who is doing what. We needed an overview and a sense of the general [scientific] consensus, and that is exactly what the PIRCA did."
- "When it has conclusions everyone agrees to, we can cite to that. ... For me, personally, that gave it *a lot* of weight. Not one scientist argued against the PIRCA report."
- "It documents the facts. It shows it's real. It's already causing problems."
- "It quantifies the local impacts. Brings [climate change] home."
- "It's a comprehensive and useful document that we can have confidence in."
- "I use resources like the PIRCA to demonstrate to the legislature that we need to take action."
- "Nice summary .... something good to cite."
- "The PIRCA has given us something to justify a change in thinking."
- "The macro-level is good background, but the specifics [in the case studies] ... make it very real."
- "It's something to cite, something to justify our claims."
- "To be honest... it's the first time that – on this detail – RMI has been mentioned at all in any assessment. .... It reflects on our situation."
- "It's an assessment. We cannot function without that."

In short, the PIRCA is proving important and useful to researchers and practitioners as a comprehensive information source, as a consensus document in political/policy contexts where action needs scientific backing or justification, as a communication and education tool, and as a research agenda-setting document. It has become *the* go-to reference document for climate change impacts in



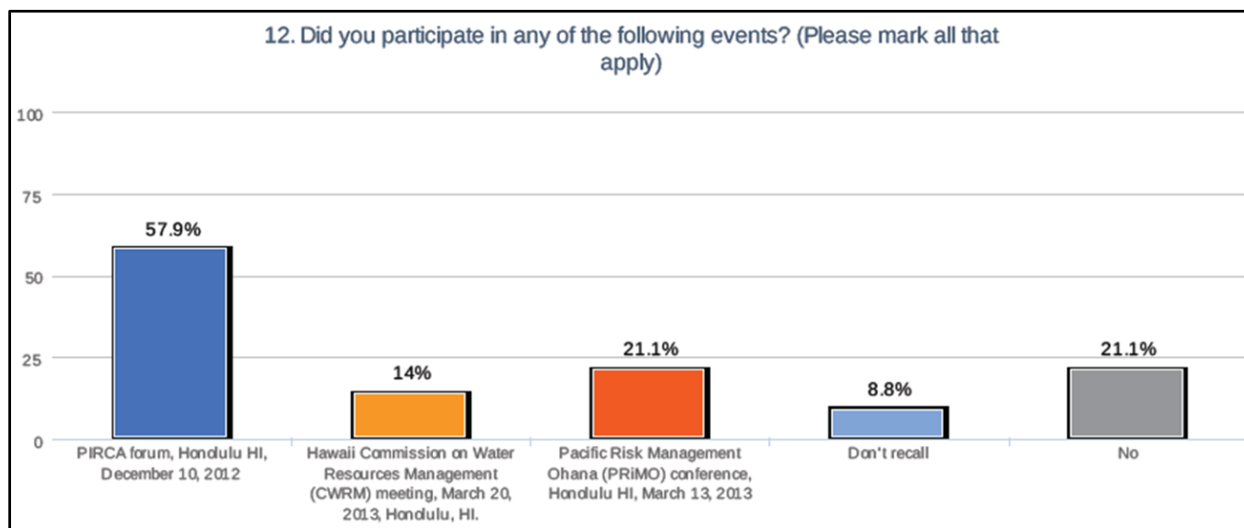
Hawai'i and the Pacific region that helps experts and non-experts alike to stay up-to-date on scientific developments, and get a read on overarching messages as well as regionally differentiated information. As Figure 13 showed, survey respondents either use the PIRCA regularly (16.3%) or occasionally (28.6%) in this way already, and the large number of people who retained it for future reference on their shelves (81.6%) apparently feel that it may come in handy for these purposes at some point in the future.

**PIRCA-related Outreach Events**

Importantly, the PIRCA is more than just a report. Through the initial informal ways in which the Pacific RISA gathered input, the three scoping/consensus workshops, the review process, and then the release/outreach events (forums and briefings), the Pacific regional assessment is also a process of engagement, an opportunity for relationship building/maintenance and networking, for trust building and mutual learning. This is very apparent from the evaluation forms from the two public forums, from comments by interviewees, and from survey respondents who also attended one of these outreach events.<sup>5</sup>

Among survey respondents, a majority participated in the PIRCA Forum in Honolulu, and far fewer in the Water Commission briefing or the PRiMO conference (Figure 15). Almost all of the interviewees either actively participated or attended either the PIRCA Forum, the Fiji forum, the Water Commission briefing, or the Congressional briefing with Senator Schatz. For the two public forums, there are also additional participant evaluation forms. Thus, the information available is most complete for the PIRCA Forum in Honolulu (event evaluation, interviews, survey results), while the Fiji Forum and Water Commission briefing miss one of these sources, and the PRiMO conference and Congressional briefing can be assessed only on the basis of one type of evaluation data.

**Figure 15: Participation in PIRCA-related Outreach Events among Survey Respondents**



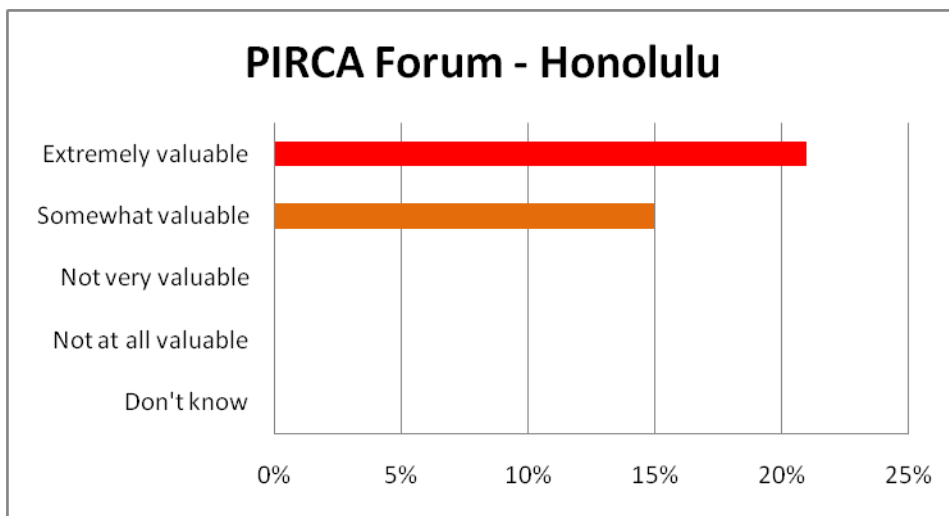
The available information on how stakeholders and attendees valued these outreach events, and in what ways, is summarized below.

<sup>5</sup> Note that there is overlap, but not completely of people who responded to the survey and those who attended PIRCA-related outreach events and completed event evaluation forms right after they happened. There is also at least a 9-month separation in time of the two evaluations. Thus, they should be interpreted as related but not directly comparable data sets.

**PIRCA Forum (December 2012)**

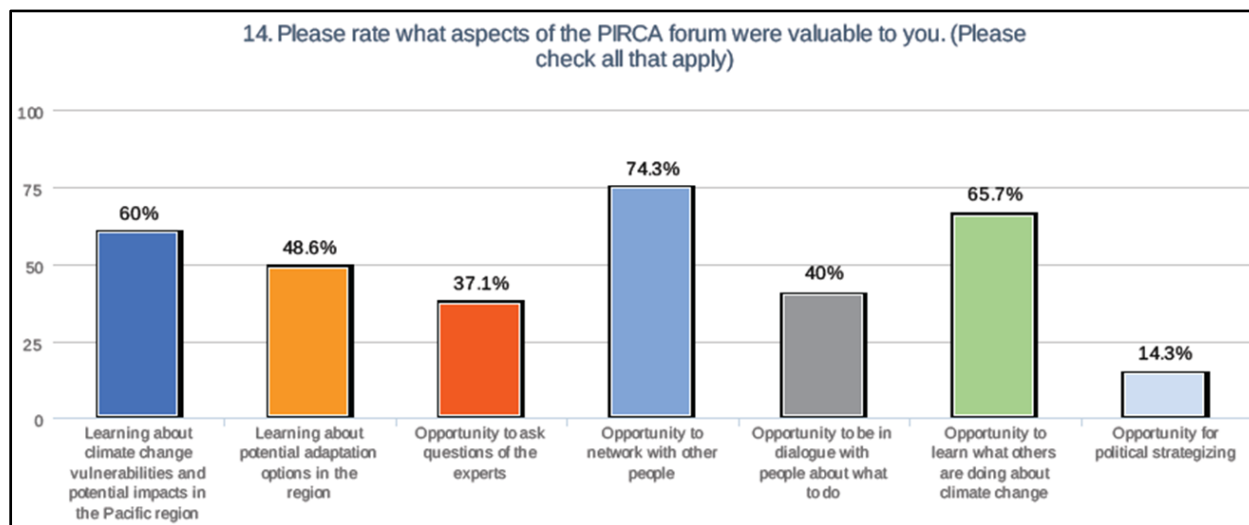
Those survey respondents who answered the question on how valuable the PIRCA Forum was to them, the clear majority regarded it as "extremely" valuable, and the rest found it "somewhat" valuable (Figure 16). No one thought otherwise.

**Figure 16: Survey Respondents' Perceived Value of the PIRCA Forum**



When asked about the ways in which the forum was valuable to them, the leading value was in the opportunity for participants to network with each other (74.3%) and to learn what others are doing about climate change (65.7%). Learning about the specific regional vulnerabilities and threats from climate change was valuable to 60%, followed by learning about possible adaptation options (48.6%), being in dialogue with people about how to respond to climate change (40%), asking questions of experts (37.1%) and – to a much lesser extent – political strategizing (14.3%) (Figure 17). These findings speak to the value of the report not solely as an information package, but its release as an opportunity to convene relevant stakeholders. Especially in Hawai'i (and the larger Pacific region), where large distances separate individuals, this is a particularly important benefit.

**Figure 17: Ways in Which the PIRCA Forum Proved Valuable to Survey Respondents**



Among those who participated in the event, and who filled out event evaluation forms, these sentiments are echoed, although the particular benefit of these evaluations is with regard to the assessment report and process: 29.4% judged the workshop overall as "extremely useful", 52.9% as "moderately useful" and 11.8% as "a little useful." The event had four stated objectives: (1) to disseminate the PIRCA findings, (2) to evaluate the value of the PIRCA report and the process, (3) to identify ways to improve the assessment process, particularly with regard to how decision-makers will utilize the PIRCA report, and (4) to identify barriers to be addressed in future assessment efforts. Table 3 shows how well these four objectives were met.

**Table 3: PIRCA Forum Attendees' Assessment of How Well Forum Objectives Were Met**

How well was the objective met?	Objective 1	Objective 2	Objective 3	Objective 4
<b>Extremely well</b>	26.5%	26.5%	32.4%	29.4%
<b>Well</b>	<b>61.8%</b>	<b>52.8%</b>	<b>47.1%</b>	<b>50.0%</b>
<b>Somewhat well</b>	11.8%	17.6%	17.6%	14.7%
<b>Not at all well</b>	0%	0%	0%	2.9%

(Source: Based on PIRCA Forum Evaluations)

The results suggest that the PIRCA forum was most successful in relaying the key findings of the report – more than 88% felt it did so well or extremely well. More than 79%, respectively, found that the event served extremely well or well to evaluate the process (Objective 2), identify ways to improve the assessment process (Objective 3), and identify barriers to be addressed in future assessments (Objective 4). Participants felt the discussions were well or extremely well facilitated (ca. 94%) and that their comments were heard and captured (89% thought it done well or extremely well). There was some minor variation in how satisfied participants were with different components of the forum (Table 4).

**Table 4: PIRCA Forum Attendees' Satisfaction with Different Forum Components**

How satisfied were you?	Public Session	Breakout #1 (sectors)	Breakout #2 (crosscuts)	NCA Town Hall	Sust. Assmt. Process
<b>Extremely</b>	44.1%	38.2%	26.5%	23.5%	11.8%
<b>Moderately</b>	<b>52.9%</b>	<b>47.1%</b>	<b>58.5%</b>	<b>47.1%</b>	<b>29.4%</b>
<b>Somewhat</b>	0%	8.8%	11.8%	14.7%	0%
<b>Not at all</b>	0%	2.9%	0%	5.9%	2.9%

(Source: Based on PIRCA Forum Evaluations)

Particularly the public session, where the PIRCA first was introduced was very well received. More than 90% of respondents (in a separate question) said that their understanding of Asia/Pacific-US relations increased as a result of the event. Notably, it is more difficult to make the larger context – the National Climate Assessment – and the sustained assessment process resonant and relevant to people. Two write-in comments on the town hall suggest this as well – "it's not relevant to people in the region", and speakers were perceived as "disconnected from the audience." While the percentage of those less satisfied is small, this remains a challenge and probably not only for Hawai'i and the Pacific region (comparable data are not available for other regional town halls to say with certainty). Overall, however, participants found the event so valuable that virtually every one (97%) said, they would like to participate in a similar activity again.

Beyond widespread appreciation for the event, some themes emerged among the suggestions offered on how to improve future events of this sort:

- **Participants** – more diverse set of stakeholders and experts, particularly more from outlying Pacific islands (though the cost implications of this were well recognized);
- **Timing** – more time between the release of the report and a discussion forum, so that participants have more time to read the report before discussing it;
- **Focus and depth** – through more specific and clearly visible break-out questions and more time to absorb the report, participants wished to get into greater depth and detail on issues;
- **Logistics** – participant comfort can be increased through better room temperature and food choices.

Interviewees who participated in the event echoed the benefits of the event. One, for example, spoke of the "interpersonal and professional exchange, the learning and inspiration" he received from the event, along with the "constant updating of expectations" by learning about the latest science. Another called the PIRCA "a blessing," given the scientific weight and evidence contained in it that gives people power to make challenging decisions. Interviewees mentioned the "courtesy visits" by Pacific RISA staff early on, inquiring about information needs and concerns, and then appreciated the opportunity to be part of the assessment process: "we were welcomed, I'm forever grateful for that opportunity." There also was appreciation for the inclusivity – the sense of o'hana (family) – created by the organizers of the forum. Clearly, striking that balance between doing and informing about science while fostering the trusted relationships that smooth the use of that information is an art the Pacific RISA seems to have mastered exquisitely.

### ***Fiji Forum (January 2013)***

The forum on Fiji was about more than the PIRCA. It was fundamentally focused on climate services, with the Pacific regional assessment and its outputs being one of several climate services for the region. In many ways (given the broad participation from across the Pacific region) it filled the gap that PIRCA Forum participants bemoaned: i.e. the lack of attendees from the islands beyond Hawai'i. While the evaluation of the event echo some of the benefits and opportunities of the Honolulu event, purposes and foci differed sufficiently and need to be kept in mind (e.g., the PIRCA forum was mostly about the report and the assessment process, as well as how to improve that process, while the Fiji event was about Pacific regional climate services). At the same time, the breadth of participants from many different countries and islands, as well as from science, government and user communities added a challenge not reflected in the PIRCA Forum.

Of the attendees who responded to the event evaluation questions, 2/3 found the event overall "extremely" (64%) or "very" (2%)<sup>6</sup> useful, and another 31% found it "moderately" useful. The event had six objectives: (1) to raise awareness of the capabilities of meteorological, oceanic and atmospheric knowledge available and used in villages and communities to support climate adaptation; (2) to raise awareness of available climate and weather service products and give a snapshot of the status of climate science, impacts, and adaptation; (3) to discuss what products and delivery capabilities are needed for community climate adaptation and disaster and risk management planning; (4) to discuss the development of a long-term strategic plan for the delivery of climate and weather services to the region, considering user requirements and user feedback, to minimize gaps and overlaps and to align climate service activities that already exist in the region; (5) to establish support for peer-to-peer learning networks; and (6) to cultivate the growth of a sustained climate assessment process that is grounded in the iterative 'coproduction of knowledge' through dialogs between local experts, key decision-makers, and scientist. Table 5 below summarizes how well participants felt these objectives were met.

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<sup>6</sup> Volunteered category.

**Table 5: Fiji Forum Attendees' Assessment of How Well Forum Objectives Were Met**

How well was objective met?	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6
<b>Extremely well</b>	<b>44%</b>	<b>53%</b>	29%	24%	33%	38%
<b>Well</b>	43%	40%	<b>58%</b>	<b>51%</b>	<b>39%</b>	<b>47%</b>
<b>Somewhat well</b>	13%	7% <sup>7</sup>	13%	22%	25%	10%
<b>Not at all well</b>	0%	0%	0%	3%	3%	1% <sup>8</sup>

(Source: Based on PIRCA Forum Evaluations)

The first two objectives of the forum – essentially to raise mutual awareness of the availability of local capacity and knowledge about the ocean/climate/environment system and of scientific information that could aid in local management – were met to great satisfaction of participants (87% and 83% thought these two goals, respectively, were met either "extremely well" or "well"). The next two objectives, more focused on the products and delivery mechanisms to get information to communities and to get it used, were met "well" according to 58% and 51%, respectively, with more than an additional quarter of participants feeling these were met "extremely well." The last two objectives were focused more on the "soft infrastructure" of effective climate service production, delivery, and use, namely the face-to-face mentoring, networking, and ongoing process that supports it. Seventy-two percent and 85%, respectively, felt that these objectives were met "extremely well" or "well." Individual forum sessions were by and large very satisfactory to participants (more than 80% of respondents judged each of them as having gone "extremely well" or "well"), with similarly high marks for facilitation and capturing of participants' comments. Tellingly, 99% of participants wished to participate in a similar event in the future again.

More specifically useful, however, for planning of such events in the future were write-in comments. Maybe the most commonly offered comment was how well the event was organized. A number of issues received opposing suggestions, e.g., while some felt the mix of people attending was great, others suggested yet more types of possible participants; while some wanted more presentations and scientific content in plenary, others wanted more time in small-group discussion and interactive sessions that are more use/practice oriented; and while some suggested a greater number of participants, others advised to limit the number (though everyone wanted to come back). Several themes emerged from the 60 volunteered remarks:

- **Balance of voices** – several comments bemoaned the dominance of US and Australian ("palagi", foreigners) voices over Pacific Islander voices. The comment speaks to the significant skill facilitators need to manage the cultural differences in how easily some speak in public forums of this sort. Smaller break-out sessions and more participatory formats were suggested to make it easier for everyone to contribute.
- **Facilitation** – a number of commentators requested training for facilitators, and more lead time for facilitators to prepare for their task
- **Jargon and communicating science** – for some participants, there was too large a gap between the scientific presentation and language on the one hand and what they were familiar with on the other. A couple of comments suggested more be said about how to communicate science.

<sup>7</sup> One respondent volunteered a category between "well" and "somewhat well"; this was added, conservatively, to the "somewhat well" category for the sake of this tabulated presentation of results.

<sup>8</sup> One additional check (1%) in the "N/A" category was omitted from this table.

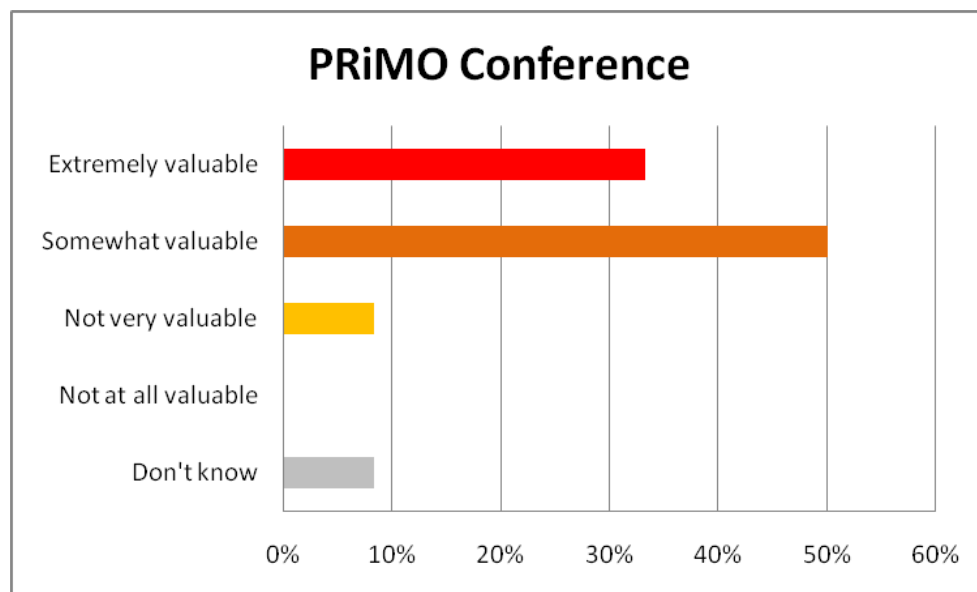
- **Traditional knowledge** – a number of comments suggested more should be included on real-life experience and traditional knowledge of islanders. This should include more traditional forms of sharing of information ("talanoa"/storytelling, song and dance).
- **Clear outputs** – several hoped for more concrete "take-homes", in addition to materials from the conference, action plans, a tutoring network ("mafana"), case studies etc.
- **Logistics** – comments here asked for more comfortable room temperature, video-taping or recording to capture contributions and discussions more effectively, hand-outs, training materials, and all presentations on thumb drives to take home (or otherwise available).

In summary, the evaluation of the Fiji Forum hints at the unique challenges involved in conducting assessments and providing climate services to a huge region with diverse needs, stakeholders separated by long distances, and – by majority – lacking the resources to travel and thus facing enormous hurdles in interacting with colleagues and peers on a regular basis. The need to build and maintain capacity and the need to build integrative bridges between scientific and traditional knowledge are among the greatest challenges for a sustained assessment in this region. PIRCA partners, including the Pacific RISA, play varying roles in meeting this challenge, and while truly enormous, the receptivity and appreciation among participants expressed in these evaluations, speaks to how well they have met the need.

**PRiMO Conference (March 2013)**

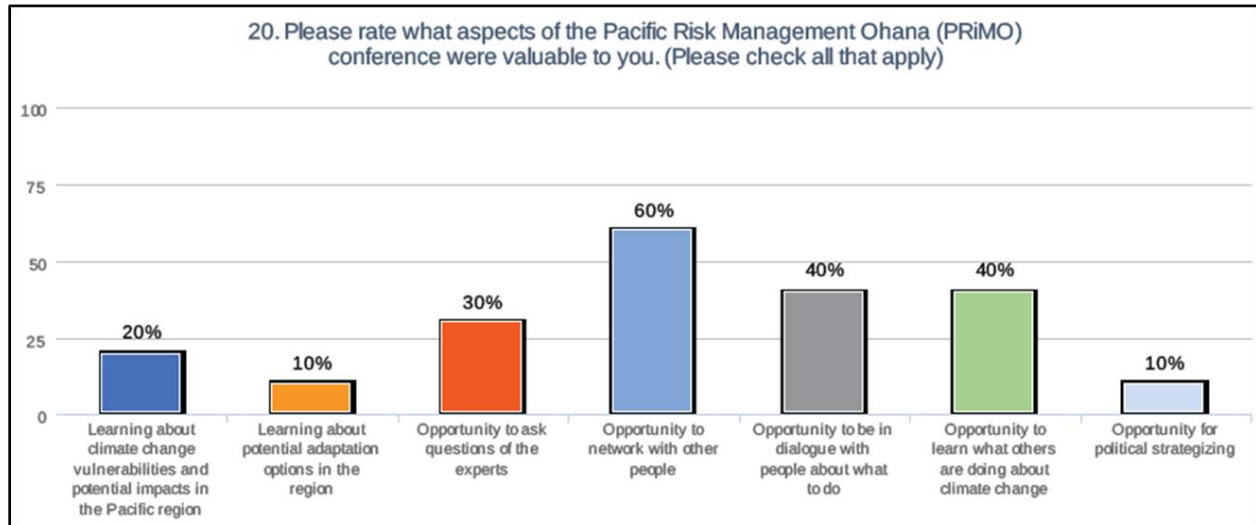
The Pacific Risk Management 'Ohana (PRiMO), a coalition of organizations with a role in hazard risk management in the Pacific region, had its annual meeting in March 2013 in Honolulu. Both M. Finucane and V. Keener, along with PIRCA Partner J. Marra and others offered presentations in a session focused on notable climate change research. The session offered an opportunity to "provide participants with the latest seasonal climate outlooks and new information on longer-term climate and sea level trends in the Pacific Islands and updates on ongoing efforts to manage [these] risks." PIRCA findings (Keener) were highlighted as well as Pacific RISA capacity building efforts (Finucane) in the region. The presentations were followed by discussion with the ca. 30-40 individuals attending the session. Several survey respondents attended the event and provided feedback on how valuable they found the session (ca. 85% judged it as "somewhat" or "extremely" valuable) (Figure 18).

**Figure 18: Survey Respondents' Perceived Value of the PRiMO Conference Briefing**



Similar to the PIRCA Forum, survey respondents first and foremost appreciated the opportunity to network (60%), and to discuss and learn from each other what can be done to increase community resilience in the face of growing climate threats (40%, respectively). This was followed by the opportunity to learn from experts (30%), and specifically to learn about climate change-related threats and vulnerabilities (20%), and to a lesser extent to learn about adaptation strategies and to strategize politically (10%, respectively) (Figure 19).

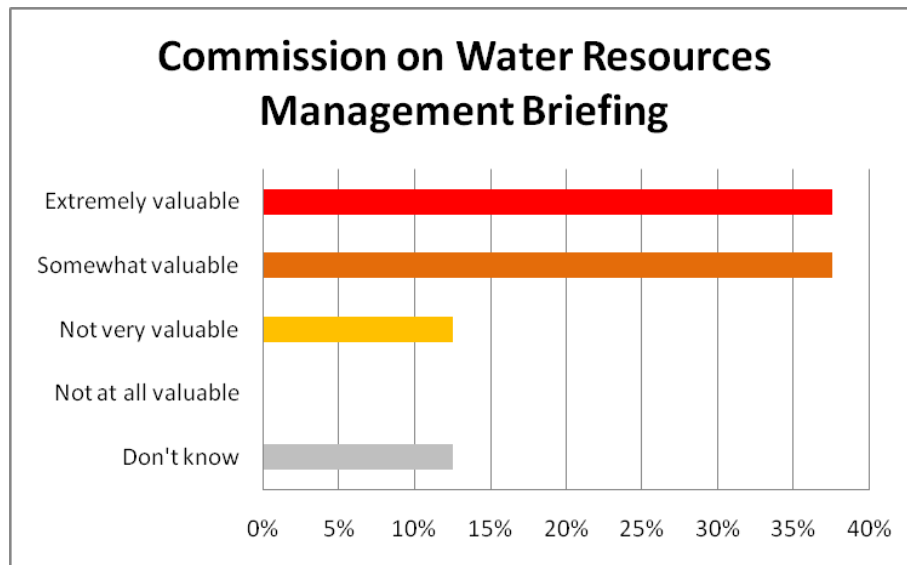
**Figure 19: Ways in Which the PRiMO Conference Proved Valuable to Survey Respondents**



**Water Commission Briefing (March 2013)**

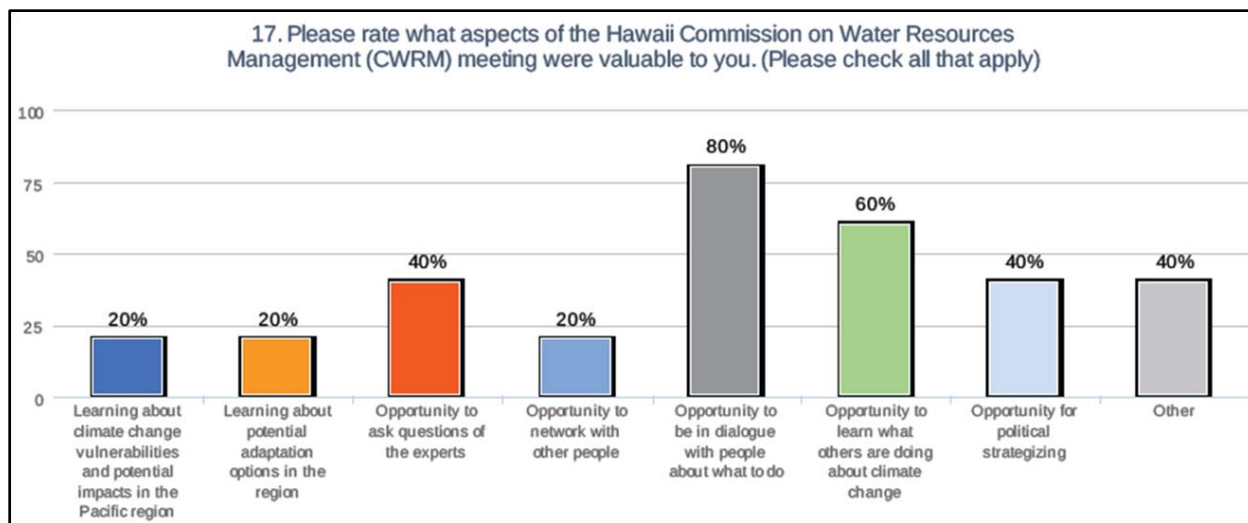
Shortly after the PRiMO conference, the Pacific RISA (V. Keener) had an opportunity to brief the Commissioners of Hawaii's Water Resources Management Commission. Several survey respondents witnessed that briefing and judged it to be "extremely" or "somewhat" valuable (more than 37%, respectively), while a small number of respondents found it "not very valuable" or could not judge (Figure 20).

**Figure 20: Survey Respondents' Perceived Value of the Water Commission Briefing**



The profile of how that briefing was valuable is quite different from the other two outreach events for which such data are available, quite likely because it involved and was primarily oriented toward decision-makers and the actions they could take. The overwhelming benefit of that briefing was in the opportunity to be in dialogue about how to respond to climate risks (in the water management context) (80%) and to learn about what others are doing about climate change (60%). Here, the opportunity (for Commissioners and Commission staff) to ask questions of experts (40%) and to politically strategize about how to move forward (40%) rose to the fore (Figure 21). Write-in comments (40% for "Other") underlined the opportunity for the elected officials and others in the audience to be educated about the importance of climate change, a sentiment echoed by the attending interviewees.

**Figure 21: Ways in Which the Water Commission Briefing Proved Valuable to Survey Respondents**



Interviewees attending the briefing underlined that individual Commissioners are unlikely to absorb the report in any detail, if at all. However, this makes a personal briefing to them at the level of key take-home messages all the more important. It puts the key reference document on record, on which future changes in planning or policy guidance will be based, in a way that individual scientific papers are not. An event of this sort thus gives staff important expert backing for when they present their findings and recommendations to the Commission (based on the scientific consensus, as captured in the PIRCA). As one interviewee put it, the PIRCA offers "solid science", which "makes it hard for the Commission to not do something. Certainly it makes it hard for them not to go along with staff recommendations." As staff update the State's Water Conservation Plan, the PIRCA provides that scientific basis and helps refute potential opposition or contestation that may emerge in public hearings.

But to Water Commission staff, the PIRCA and, in particular, the Pacific RISA offer added value beyond providing a technical basis and political backing. As one interviewee volunteered,

"A few years ago, people just did their own thing. Now it's jelled into a clearinghouse. PIRCA and the Pacific RISA got everyone to work together. Everyone knows what everyone else is doing. Now I only have to call one person: Viki Keener."

**Senator Schatz-sponsored Congressional Briefing (September 2013)**

Brian Schatz, formerly the Lieutenant Governor of Hawai'i and now one of the two US Senators from that state, has long been a champion of climate action. He offered opening remarks at the Honolulu PIRCA Forum and later co-sponsored a Congressional briefing in Washington, DC on the PIRCA. Pacific



RISA staff also helped out with the Senator's Water Sustainability Forum – which was another opportunity to highlight the PIRCA. Clearly, the Congressional briefing must be seen as only one, albeit an important, event in an ongoing relationship between Schatz's office and the Pacific RISA, and itself notable for the Senator's direct involvement, in addition to several of his staff.

Interviewees reporting on the briefing appreciated that it was really good in showing that climate change is real and is already causing impacts on real places and people, "without being overwrought, alarming, and overreaching into policy". A "read of the room" suggested to them that attending staffers were engaged, they "listened and asked questions," but, regrettably, that the presentation went on too long and there was not enough time for questions and answers. While an independent evaluation of the usefulness of the event is not available from the estimated 25-30 attending staffers, the briefing offered an important platform to bring regional/place-based climate change impacts alive. Interviewees judged the turn-out to be very good given a competing event on climate change at the same time. To my knowledge no other technical input report to the NCA has been reported on in a briefing "on the Hill." One interviewee exclaimed emphatically that if one wants to get Congress to pay attention and to enact climate legislation, "a Senate hearing is the way to go." Thus, the Pacific RISA as the initiator of this event, must be applauded for bringing the PIRCA findings to Congressional attention.

Similar to the usefulness of the PIRCA for Water Commissioners, the PIRCA report itself is useful as a reference document – a report that documents what is already happening in the Senator's region and what is causing those harmful impacts. While staff did not think the Senator had read the report in any detail, they underlined his repeated call for "good science, good data" as backing for his policy initiatives (e.g., on ocean acidification, immigration, etc.). To staffers, the PIRCA report is that and the case studies proved particularly interesting in addition, as they connected climate change and sea-level rise well to human concerns and activities.

In addition to the briefing that got some visibility, and the report itself, the close relationship of Pacific RISA staff (M. Finucane and V. Keener) with Congressional staffers and employees of various government agencies and other organizations, offers those who are not experts on climate change, an ongoing opportunity to ask questions and be educated in the safety of their offices. One interviewee, who learned about the PIRCA only relatively recently, admitted that the "report is very dense, overwhelming" and that it took several conversations with M. Finucane and V. Keener "to get what it's all about." This need among non-experts for "personal" tutoring cannot be overstated, and speaks to the trust that has been built over time between the Pacific RISA and the Senator's staff in particular. Through the interviews with staffers it became clear how they are willing to extend a hand back to the Pacific RISA in return, and to continue to work with them in the future. This may be the most important impact to have: a reciprocal, trusted relationship on which to build. Specific opportunities will be highlighted in Sections 4.3 and 4.4.

### Summary

The richness of available evaluation data on PIRCA-related outreach events is a crucial opportunity to get in-depth understanding of how the national and regional climate assessment serves stakeholders. As the findings reported here suggest, these benefits fall into a number of distinct categories:

- **Networking opportunity** – A repeated finding from the survey and event evaluations, bringing people together who otherwise don't necessarily interact, remains one of the most important benefits, even in the age of the internet and social media.
- **Direct learning from experts and peers** – A report – like all scientific information – becomes accessible when conveyed by a real person. This is particularly so in a time of information overload when most information is only superficially scanned.
- **Social capital building among stakeholders** – Learning from each other, connecting, and refreshing relationships among stakeholders, especially in a geographically large region like

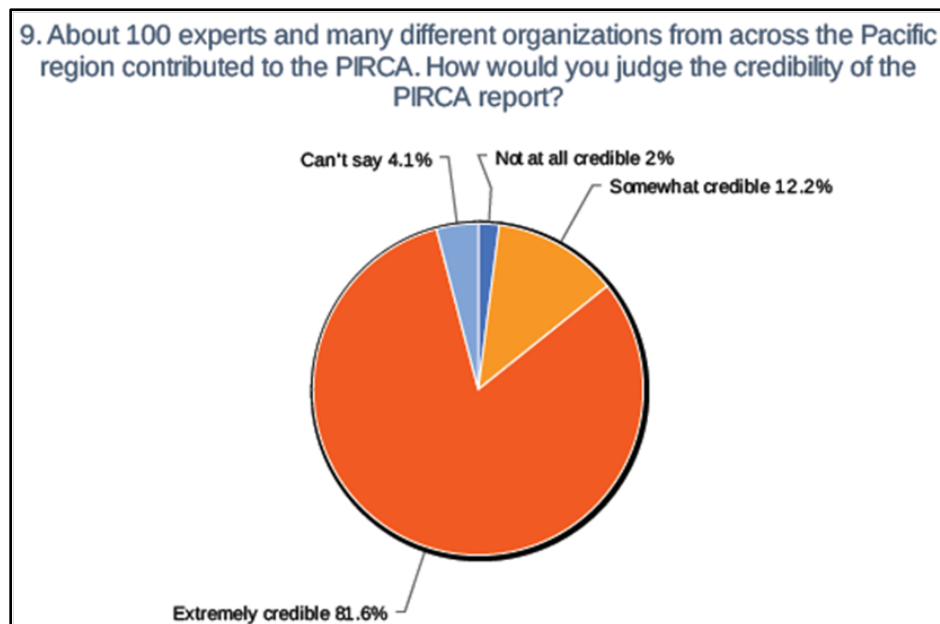
the Pacific, is crucial to assist learning, spread best practices, and create the enabling environment in which novel information becomes integrated into management practice.

- **Trust building between scientists and decision-makers** – The mutual learning, support, and reciprocity, particularly between scientists and decision-makers is the key ingredient to ensuring that the right information gets produced, presented, and eventually used.
- **Political significance** – The political significance of direct interaction with elected officials also emerged as a crucial benefit of the Pacific RISA's outreach efforts. Getting on the record, reaching decision-makers directly, providing the reference document that helps support policy changes and refute opposition are significant outcomes.
- **Visibility as go-to point of contact** – Finally, the coordinating and synthesizing function of the PIRCA has been noted repeatedly, but outreach efforts – from the initial courtesy visits to the briefings after its release – by one and the same institution – solidify in stakeholders' minds who to call for information in the future.

### Perceived Credibility of the PIRCA by Stakeholders

It is difficult to separate perceived "usefulness" from the PIRCA's perceived "credibility." As the interviews made extensively clear, the report would not be useful, if it was not also credible. Differently put, some of its usefulness derives directly from the report's credibility (see above). This is clearly the take-home message from the survey respondents (Figure 22).

**Figure 22: Survey Respondents' Perceived Credibility of the PIRCA Report**



The overwhelming majority (81.6%) said the report is "extremely credible" but more insights can be gained here from the key informant interviews. Every single interviewee agreed or underlined just how credible the PIRCA report is. As one put it, "It has huge credibility." Almost verbatim, another said, "It's very powerful, has huge credibility." A third called it "super-credible." And another spoke to "how comfortable" he is using it because of its credibility.

Several interviewees made clear what this credibility is based on: "The players involved, the sponsoring agencies, the credentials of the writers, how well documented it is, the sources cited." Not explicitly stated, but alluded to through the comments about "foreigners" during the Fiji Forum, and confirmed from other experiences in the Pacific region (e.g., Moser 2006), credibility is attributed by Pacific Islanders to a report about their region when it is written by *regional* experts. Far from just a sign of parochialism, past reports written by "mainlanders" contained obvious mistakes and did not respect cultural perspectives. Thus, for regional stakeholders interviewed, additional credibility was derived from the fact that what the report says about already experienced impacts matches what they notice and experience: "we see it, proof-positive, that it's happening." For experts, the match with other science they are familiar with is the benchmark against which the PIRCA's credibility is judged. Others emphasized the fact that it is a scientific consensus document that gives it weight.

One interviewee said that in interactions with policy-makers, the most valuable asset is one's own credibility. Thus, to have credible science – in the form of the PIRCA – to back up one's claims is crucial. This sentiment is clearly echoed in the impressions reported above of Drs. Finucane and Keener in the briefings they conducted. Impeccable credentials, strong expertise, and the skill to convey it clearly and without "overreaching into policy" (i.e., advocacy) constitutes the personal credibility that gets added on to the report's credibility.

From the insights gained so far then, it is clear that the PIRCA is perceived as *legitimate* in its inclusivity of those involved and in echoing the concerns of those affected across the region; it is particularly perceived as *credible* through the science it documents, the people involved, and the respected sponsoring agencies, and made doubly so, when presented or communicated in briefings by researchers viewed as credible (such as those in the Pacific RISA); and it is *salient* in that it speaks to regional concerns, some already experienced in Hawai'i and on other Pacific Islands, others growing as climate change and sea-level rise continue. In short, the PIRCA meets the key attributes of influential and useful information. What then did the interviews reveal about actual use? What real impacts in policy-making and management can be traced back to the PIRCA report?

### Actual Uses and Policy Impacts of the PIRCA

Both the survey and the interviews provide some insights on actual uses of the PIRCA in practice and policy. Figure 13 above was used to show how survey respondents' uses of the report reached wider and wider audiences. Of particular relevance here is the fact that some 28% said they used it occasionally in their daily work, more than 16% said they refer to it regularly (without further specification), and nearly 39% gave one or more presentations based on the PIRCA. Among the write-in answers, respondents mentioned that they provided the Executive Summary for a media briefing and used it in community outreach and as a communications tool. Other comments suggest respondents find it useful in developing courses, to gauge where the research gaps are, and for developing research projects accordingly.

It is important here to note the organizational affiliations of the survey respondents: by majority, they work in federal agencies or programs (39.3%), at a university (34.4%), in non-governmental organizations (13.1%), the private sector (11.5%), in state agencies (6.6%), schools (3.3%), or in the state assembly or local/county government (1.6% each).<sup>9</sup> Not surprisingly, and reassuringly, the PIRCA serves both practitioners and researchers/academics in their work. It is impossible, however, to trace the impact of these uses further and to gauge outcomes from the survey.

The interviews provide more insights into this question. The PIRCA was and continues to be most impactful as a credible reference document, but also as a critical knowledge assessment, as a way to

<sup>9</sup> Percentages adjusted after reviewing write-in answers.

inform future research agendas, as an influence on planning and management priorities, as an accessible means of communication and education, and as impetus to new collaborations. Examples in which it was used in these ways are detailed below:

***Federal policy-making***

- It was used (and cited) in a brief floor speech by Rep. Gabbard in Congress as a reference on climate change impacts on agriculture.
- It is regularly used as scientific backing for Senator Schatz's legislative initiatives on climate change, water, immigration and ocean acidification.
- It is being used as background for a video produced for Senator Schatz on already occurring climate change impacts.

***State policy-making, planning and management***

- It is (and will be) used to raise awareness among distracted public and policy-makers of the need for climate legislation.
- It serves as important motivation to legislative champions to strategize how to push climate legislation forward in the state; is used to mobilize other state legislators ("It helps to beat the drum"); and it is used as backing for state climate legislation (currently in development) by Reps. Thielen and Lee (leads).
- It is used in lobbying of state legislators on policy initiatives related to invasive, coastal, water and reef protection.
- It is used in environmental reviews of development proposals and brought to the attention of developers, thus allowing state agencies to require water-conscious modifications of applications.
- It offers a central repository of relevant scientific information, thus makes staying current on scientific developments easier for agency staff.
- It is considered politically important to have had an official briefing on the report on public record.
- It allows agencies to back up guidance on adaptation planning, to require scenario planning in water resources management.
- It specifically informs the update of the Hawai'i Water Resources Protection Plan.
- It has led Water Commission staff to rethink safe yields for ground water ("The PIRCA has given us something to justify a change in thinking") and they put more planning effort now into resource augmentation (i.e., capturing rainwater, recycling of used water) and into water conservation.
- It was reviewed in the context of updating the State Coastal Management Plan, and informed what impacts need to be considered, as well as helped set management priorities.

***Pacific Island policy and practice (beyond Hawai'i)***

- It was subject of a personal briefing of the RMI Department of Environmental Policy (a future briefing is expected when the new administration is settled in).
- It serves as background information to scope Pacific regional security concerns (expected to be used in greater detail in the future).
- It gave the impetus to forming a Working Group on Pacific regional security concerns, now meeting monthly on Oahu.

***Research and NCA process***

- It is witnessed to be "frequently cited" in reports, and was referenced in a NOAA grant-writing workshop.

- Several interviewees stated that the PIRCA resulted in research being undertaken that would not have occurred otherwise, thus filling important research gaps (e.g., on RMI, in the water sector).
- It provided the credible, high-quality regional assessment input requested for the NCA.
- It serves as a reference document to inform future federal research funding priorities.

#### **International Climate Negotiations**

- The PIRCA could, but does not yet, serve as technical input into the UNFCCC negotiations. In order to be considered there, it needs to be submitted by SPREP or another key contact or island focal point (see below).

This list of direct outcomes is indeed considerable, and constitutes just the set of achievements a report and assessment effort might wish to have. The diversity of settings in which the report has found usage and the range of ways in which it has served stakeholders is encouraging. It is probably unrealistic to expect it could do better, although the list should be considered incomplete, as it is entirely based on what could be captured from the interviews. A broader set of interviewees and complementary insights from PIRCA partners might quite likely reveal additional uses. The survey, with a majority of federal agency and university respondents, yielded certain insights, and a different set of respondents may have yielded yet more outcomes.

While interviewees suggested several ways in which the information can be made even more accessible and therefore more impactful, and what future information and assessment needs there may be, the PIRCA has established itself as the legitimate, credible and salient assessment for the region. This paves the way toward further assessment activities and scientist–stakeholder interactions that are likely to increase the use of relevant science in planning and decision-making in the future.

### 4.3 Additional Opportunities to Increase Awareness and Usefulness of the PIRCA

Interviewees offered a number of suggestions of how the PIRCA could be made more useful in and of itself, both by creating or using additional outreach opportunities and/or by providing entries into the report through different brief, accessible summaries or foci. These suggestions are summarized below.

#### Future Outreach Opportunities

From the interviews, a range of suggestions were obtained of additional opportunities to raise awareness of the report and its findings.<sup>10</sup>

- **State policy-makers** – Representatives, who are in an ongoing process at this time to develop a political strategy to advance climate change legislation in Hawai'i, suggested it would be helpful to hold a legislative briefing very early in 2014 (before the legislative session is back in full swing) to educate legislators and their staff about climate change, already experienced impacts, and future expectations.
- **International negotiations** – To ensure the PIRCA is seen and considered in international climate negotiations, the Pacific RISA should ensure that SPREP or another island focal point submits it through official channels (during a "call for submissions from parties") into the UNFCCC/SBSTA process. In addition, the PIRCA should be brought to the attention of AOSIS

<sup>10</sup> To ensure timely opportunity to act on these suggestions from interviews, several of these suggestions were already conveyed to M. Finucane and V. Keener.

Regional Coordinator, Ann Gordon ([Anngordon@hotmail.com](mailto:Anngordon@hotmail.com)), or one of their scientific advisors (Beth Holland), to ensure that they draw on it in the negotiations.

- **Water Commission** – The Hawai'i Commission on Water Resources Management is interested in continued interaction with the Pacific RISA and may request another briefing or attendance during a decisional meeting on the Water Resources Conservation Plan update.
- **Other state agency staff and elected officials** – While an unspecific recommendation, the need to find more ways to educate policy-makers and managers was emphasized. Interviewees suggested that practitioners and elected officials are nowhere near in their understanding to where the science is, and they need to be brought up to speed quickly. This might be done at any of these additional opportunities or through briefer derivatives of the PIRCA (see below).
- **Congressional offices** – Beyond the report itself interviewees suggested various forms of ongoing outreach, including:
  - Several interviewees, especially Congressional staffers (where turn-over is more frequent), explicitly wished to be added to the Pacific RISA mailing list (e.g., for notification of reports, other products, blogs, event notifications) so they can stay apprised of their work.
  - Stay in touch with Senator's and Representative's office, continue to hone and maintain those relationships.
  - Come to Washington with "better asks", i.e., a prioritized list of needs
    - Are there specific needs not just of the Pacific RISA, but that would help in Hawai'i and the Pacific region (e.g., monitoring needs, such as rain or stream gauges)?
    - Before another briefing, contact the office to discuss these needs so they can be worked out and then be delivered powerfully in the briefing.

### Additional Report Derivatives

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Outreach and related products are not easily separated as opportunities arise when the information is available in new or different formats. Interviewees suggested several ways in which the report contents can be made more accessible still and thus possibly more useful to potential information users. All of these suggestions speak to the user community, which is not used to reading long text, not necessarily willing or able (given other obligations) to acquire the necessary scientific literacy to absorb the PIRCA in any detail, or simply too busy. Some of these may also serve broader outreach and educational needs.

- **2-Pagers and blogs** – Break the PIRCA down into shorter, digestible hand-outs (1-2 pages per topic, fairly high-level synthesis), interpreting the science so the implications are better understood by non-expert readers.
- **Jurisdictional breakdowns** - Break down the PIRCA information by jurisdiction and topic to help busy managers more quickly find the relevant insights and underlying data. "We need Hawai'i-specific data, and it's hard to sift through [the report] and find what we need."
- **Visualizations** – Find ways to tell the story in pictures and easy graphics, maybe even animated, interactive graphics.
- **Sound bites** – Condense into sound bites (with increasing depth for backing up the sound bites).
- **Explaining uncertainty** – Provide better explanation of the uncertainties – to what extent are they due to different projections, due to other factors, can they be resolved through science or not? What do they mean for management?

All of these suggestions, particularly the two-pagers, visualizations and sound bites should, as one interviewee suggested, "sell the importance of the work: show the impacts on people, the economy, and on critical infrastructure." Importantly, these suggestions should not just be considered more busy work, but opportunities to honor the incredible amount of work that went into the PIRCA. Not all of these expressed needs and desires can or should be met by the Pacific RISA, but should be shouldered by all PIRCA partners, with clear assignment of responsibilities. Given the relatively superficial read by many non-scientists (and maybe even by scientists on anything outside their areas of expertise), there is an opportunity here to briefly summarize key issues in various sectors, illustrate cross-sectoral interactions, highlight sub-regional and place-specific impacts already occurring and projected, list possible adaptation strategies and what is scientifically known about them (i.e., translating science into needs for action without becoming prescriptive). In short, these additional derivatives keep the report alive in a world of constant information flow, and – to the extent produced by the Pacific RISA – help maintain and solidify its visibility as a source of credible and salient information.

#### 4.4 Future Assessment Needs

Future assessment needs were mentioned by most interviewees as well as by survey respondents. The specific comments of interviewees are placed into the context of the survey findings to provide further detail and depth. The interviews also led to discussions of continuing the regional assessment effort over time, which is summarized at the end of this section.

#### Topics for Future Assessments

From the 65 substantive write-in answers in the survey, a number of issues and sectors arise as priorities for future assessments. Before discussing these, it is important to mention that it is unclear whether survey respondents specifically asked for an "assessment" activity, whether they wanted research done in these areas, or whether they simply wished to know more about these issues: for a compilation of relevant science on identified topic in a similarly comprehensive, easily accessible, one-stop-shop format. This must be answered by the Pacific RISA and other research and assessment partners after a review of the existing literature (i.e., after determining what is or isn't known about these issues). Also, in several instances the identified "future" assessment needs were already covered in the PIRCA, so it is unclear whether respondents simply had not read the relevant parts of the report or wanted something above and beyond what is contained in the current report. Survey respondents were asked to mention up to three priorities, and these are summarized in topical categories (developed by the author, based on these inputs) in Table 6.

**Table 6: Priority Assessment and Information Needs as Identified by Survey Respondents**

Issue area, aspect of life, or sector in the Pacific region that survey respondents would like to see covered in future assessments	Top priority	Next priority	Next priority
<b><i>Economic impacts</i></b>			
- Impacts on tourism and recreation	X	X	
- Impacts on upland forests	X		
- Impacts on fisheries	X		X
- Impacts on resources (food, fuel, fiber) and implications for management	X		

Issue area, aspect of life, or sector in the Pacific region that survey respondents would like to see covered in future assessments	Top priority	Next priority	Next priority
- Job opportunities	X		
- Economic development <sup>11</sup>		X	
<b>Human security issues</b>			
- Food security	X	X	X
- Subsistence gathering (overlap with cultural impacts)	X		
- Freshwater availability, demand and adaptive management	X	X	
- Impacts on human communities and community resilience	X	X	
- Coastal vulnerabilities	X		
- Urban vulnerabilities		X	X
- Impacts on human health		X	X
- Carrying capacity of Pacific Islands			
- Spatial mapping of changing landslide risks			
<b>Adaptation</b>			
- Types of adaptation options/strategies, at all levels	X	X	X
- Long-term solutions (not just near-term)	X		
- Economic value of different adaptation options	X		
- Adaptation experiences (here and elsewhere)		X	
- Long-range land use planning		X	
- Human migration (overlap with human security and cultural impacts)		X	
- Water management in the face of multiple stresses		X	
- Maintenance of healthy coastal land/littoral interface			X
<b>Physical systems and processes</b>			
- Long-term precipitation projections/forecasts, water levels	X		
- Ocean acidification	X		
- Ocean waves	X		
- Storms	X		
- Sea-level rise and its impacts	X		
<b>Cultural impacts</b>			
- Impacts on traditional and customary practices	X	X	X
- Impacts on cultural identity	X	X	
- Traditional knowledge <sup>12</sup>		X	X
<b>Ecological impacts</b>			
- Impacts on ecosystem services		X	
- Impacts on forest birds		X	
- Marine ecosystem health		X	
- Clearer messaging on coral reefs		X	
- Impacts on terrestrial ecosystems			X
<b>Education and Public Understanding</b>			
- Grades 6-16 <sup>13</sup>	X		

<sup>11</sup> Unclear from write-in response whether this is about how to maintain or increase economic development.

<sup>12</sup> Unclear what is desired here. Maybe to make more use of it in future assessments (as indicated by another write-in comment), and/or showing how it matches/deviates from, and can be integrated with, science.

<sup>13</sup> This may be a request for educational materials for these levels as opposed to an assessment of educational achievement or teachings on climate change. Unclear from write-in response.



Issue area, aspect of life, or sector in the Pacific region that survey respondents would like to see covered in future assessments	Top priority	Next priority	Next priority
- Level of public understanding and how to improve it <sup>10</sup>		X	
<b>Beyond Hawai'i</b>			
- More on islands outside of Hawai'i	X		
- Regionally (more) specific impacts assessments			X
<b>Advancement of Science</b>			
- Strategies for increasing data collection		X	

There are some notable trends identifiable in Table 6. First, the most frequently cited "top" priorities are related to economics and human security issues, as well as to adaptation and cultural impacts. This was repeatedly called for by interviewees as well: the economic impacts of climate change and of response options, a prioritization of response options by pros and cons, including a discussion of the likelihood of success or what is known about when an adaptation strategy works or does not work, and a comparison to the status quo. Impacts on cultural resources, ways of life, and livelihoods were also mentioned.

Second, while a number of physical system priorities were mentioned by survey respondents, all of those were already – to considerable extent – discussed in the current PIRCA. Presumably (assuming respondents actually read those portions of the report), the request here is for more detailed and/or more reliable, or spatially more highly-resolved information. Interviewees give more detailed insights here. For example, some suggested that climate change impacts on groundwater is not yet understood very well.<sup>14</sup> Not surprisingly, some also felt that better quantification of surface water *availability* is needed via improved precipitation projections, refined modeling and better forecasting skill over shorter and medium range. Similarly, there is a need to get a better handle on water *use*, the demand side, especially from agricultural<sup>15</sup> and urban users, to be able to ensure that human and environmental needs can be met in the future. Apart from these physical science assessment needs (which themselves move quickly into human use questions), the overwhelming top priorities are related to *human* activities, communities, livelihoods and security and to questions about how to deal with the coming climate risks. Human security and adaptation issues truly stand out as top, second and third priorities.

Interestingly, ecological impacts were mentioned only as second and third priorities. It is not clear whether this is a reflection of (a) respondents feeling that this area is well enough understood at present, (b) that it is of lesser interest in general, or (c) the group of survey respondents specifically was less interested in this topic area (see also the above mentioned lower values on "how interesting" the ecosystems chapter of the PIRCA was perceived to be). Among interviewees, one mentioned ocean acidification on its ecological impacts, but also wanted to understand the economic implications. So, it is possible that for both survey respondents and interviewees, the ecological impacts simply need to be examined from the point of view of multiple stressors and be translated into economic terms so as to get traction with policy-makers.

Assessment requests for areas outside of Hawai'i received relatively few votes, commensurate with a survey population largely from Hawai'i. Interviewees confirmed, however, that this remains one of the greatest needs, as capacity to conduct research and assessments in outlying islands is severely constrained.

<sup>14</sup> DWR interviewees mentioned that they have a lot of well data, and very limited capacity to analyze them. They would be interested in collaborating on making the best use of them.

<sup>15</sup> Agricultural water use is a complicated issue, as interviewees emphasized, clearly not just a matter of climate-driven increases in demand. Thus, this is an area of multiple stresses that would also need to consider population growth, water laws, and the legacy of the sugar irrigation system.

Desires for education and greater public understanding are difficult to interpret, as no further information was available on what specifically respondents wish to see. It may simply be read as a desire for more education and outreach, which certainly was echoed in the interviews.

In addition, several cross-cutting issues were mentioned by interviewees, but are not reflected in the survey, as no question specifically asked about these. One was a request that could be addressed in the specific value-added derivatives from the PIRCA (mentioned above), but should also be taken to heart for any future assessments: the PIRCA succeeded in clearly identifying uncertainties and research gaps. Interviewees mentioned that it would be interesting, however, to get updates on plans to fill these gaps, i.e., a sense of the timeline when these gaps might be filled, as it would aid them in their own planning. It is a way of giving practitioners a heads-up so they can be aware of new and potentially policy-relevant insights in light of their own planning and legislative timelines.

This request speaks to the desire expressed by virtually everyone to get a better sense of what the science means for policy and management. In other words, practitioners need help with translating the (uncertain) science into reasonable policy proposals (what is needed, what is defensible, how much adjustment is called for, what is precaution, and how so?). While this may or may not be directly included in an assessment report, such translational derivatives would make the use of assessments considerably more "policy-relevant." It clearly should not be taken for granted that practitioners know how to do this translation by themselves, and as more science on adaptation options becomes available, it presents an important opportunity to educate practitioners about response options.

### Sustaining the Regional (and National) Climate Assessment

Maybe the most frequently heard wish for future assessments is that the PIRCA be updated on a regular basis. While specific interviewees work in specific sectors and thus probably wish for updates "just for their topics" – which would imply a smaller task – virtually everyone said so, thus requiring updates – and expansion as per the above listed requests – in all issue areas.

It is notable to mention in this context that the interviews with Senator Schatz's staff resulted in a lengthy discussion about the "sustained assessment." What became clear is that little is understood by Senator Schatz's staffers, and "on the Hill" more generally, about just what amount of effort – and for many involved – *volunteer* effort went into the PIRCA, other technical inputs and the national report. As one put it, "I don't fully understand the complexity of the NCA." Little is known about the GCRA of 1990 that requires that such assessments be undertaken regularly. After explaining that mandate and complexity, the response was, "There is no convincing needed in this office to support it" and "We're willing to help find a permanent funding mechanism for the sustained assessment."<sup>16</sup>

## 5. Summary

This report sought to assess the outputs and delivery of the Pacific Islands Regional Climate Assessment through various outreach modes and opportunities, and trace its tangible impacts on policy and practice. Employing a multi-method approach and a number of independent data sets, the results are internally consistent, mutually reinforcing, and comprehensive, although no review was undertaken

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<sup>16</sup> The NCADAC's report on what a sustained assessment might look like and require (Buizer et al. 2013) was forwarded to the relevant staffer. While this is something I will follow-up on, Pacific RISA support for Hill education about the NCA in general and the needs to sustain it over time would be most welcome. Finding support for sustaining the Pacific regional arm of the NCA "machinery" may thus be a logical item for the "more concrete wish list" that was suggested above.

to evaluate the specific work, contributions and outreach other key PIRCA partners have done. Thus, the findings are specific to the Pacific RISA, and may well underestimate the impact of the PIRCA as a whole. Even so, what this assessment found can only be synthesized in superlatives:

***Timely Input to the National Climate Assessment***

(15) The PIRCA was delivered on time as a technical input report to the US national climate assessment. It constitutes a crucial underpinning of the Pacific regional chapter of the national report.

***Successful Assessment Process***

- (1) The Pacific RISA developed an inclusive process to ensure that the relevant experts and stakeholders were meaningfully involved in the development of the PIRCA report.
- (2) The PIRCA process has served the crucial function of coalescing a dispersed research community and centralize access to important scientific information for users.
- (3) The Pacific RISA in particular mastered the art of inclusivity, relationship building, and cultural sensitivity – all important in the region – in the process of leading the PIRCA process.

***Highly Visible Media Work***

- (4) The Pacific RISA also, more than any of its partners (as can be discerned from the media coverage) ensured that relevant stakeholders and the public heard about the PIRCA once it was completed. It played the most important role in the media outreach, and led (or in one case, co-led) key outreach events after its release.
- (5) The active media work of the Pacific RISA resulted in a greater number of unique media hits than for any other technical input report (regional or sectoral), and was second only to the media coverage of the draft NCA report. This significant coverage included a story in Hawaii's main newspaper, a cover story in a local weekly magazine, and an hour-long appearance on the local PBS channel. Most media was "earned" media, suggesting others viewed it as a crucial report to write about. Media coverage was local, regional across the Pacific and US-national, including stories oriented toward Congressional and DC audiences.

***Inclusive, Informative and Impactful Outreach***

- (6) Participants of PIRCA-related outreach events assessed them as important opportunities not just to learn about the PIRCA report, but for networking and being in dialogue with each other, for peer-learning, and for reaching management and planning staff and elected officials.
- (7) The PIRCA constitutes the only technical input report that has received a hearing "on the Hill."
- (8) There is strong evidence for extensive awareness of the PIRCA report in Hawaii among relevant stakeholders (the evidence base is less strong for other Pacific sub-regions).
- (9) Beyond the report itself, PIRCA-related outreach events were useful in several ways: they served as an important opportunity for networking and social capital building among stakeholders, for direct learning from experts and peers, for trust building between scientists and decision-makers, for giving the Pacific RISA visibility as the go-to point of contact, and for putting climate change and the assessment on the public and political record.

***High-Quality, Useful Information: Salient, Legitimate, and Highly Credible***

(10) The PIRCA is perceived as very interesting to those who read (parts of) the report. Covering the wider Pacific region, speaking to more than Hawaiian concerns, and reflecting experienced climate change challenges also lends it perceived salience and legitimacy.

- (11) The PIRCA is perceived as useful in a number of ways: as a comprehensive information source, as a consensus document in political/policy contexts where action needs scientific backing or justification, as a communication and education tool, and as a research agenda-setting document. It has become *the* go-to reference document for climate change impacts in Hawai'i and the Pacific region that helps experts and non-experts alike to stay up-to-date on scientific developments, and get a read on overarching messages as well as regionally differentiated information.
- (12) The PIRCA earned highest marks for perceived credibility, which greatly enhances its usefulness both for scientists and for practitioners.

### **Traceable Impact**

- (13) There is traceable use and impact of the PIRCA in state and federal policy-making, in state agency planning (through which it will also affect local planning and decision-making). Most frequently, to date, it has served as reference document, as source of information for speeches by political leaders, as backing for policy initiatives, and as motivation to rethink management approaches and alter plans.

## **6. Recommendations**

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The undisputable success of the Pacific regional assessment process and clear results for the research and user community does not imply the work is done or that there are not important continuing opportunities to give the PIRCA "legs" and a life beyond the first year of outreach. This is partly the result of the phenomenal success of the report and related outreach, which inevitably opens further opportunities, partly the result of the Pacific RISA's ongoing relationships with users, and partly the result of the ephemeral nature of attention, awareness and memory of any report. In fact, very few of the suggestions made by interviewees reflected that something was done "inadequately." Rather, it is more like a case of starting to feed a stray kitten at the back door: she will be back for more love! Thus the suggested additional work is to be read in that light.

The Pacific RISA has the opportunity to continue to be *the* go-to source for climate change-related information (particularly on all water related issues), and thus to strengthen its visibility and credibility among potential information users. The social capital built as a result of this process *must* not be lost.

### **(1) Ensure that the PIRCA can be found by potential users.**

- Several key information hubs in the Pacific region (SPREP, PRiMO) as well as some of the PIRCA partners do not currently list the PIRCA report on their websites as resources. This should be remedied.

### **(2) Produce more value-added PIRCA derivatives to keep the report alive and reach more audiences, particularly non-experts.**

- Create shorter, more focused, more accessible, and jurisdiction-specific derivatives (see specific recommendations on pp. 35-36).
- Provide more overt translation of science to policy alternatives.

### **(3) Moderately adjust future regionally and stakeholder-specific outreach events.**

- Ways to improve outreach events differ by region as audiences differ in needs, capacities and interests (see specific recommendations on pp. 25, and 26-27)

**(4) Take advantage of additional outreach opportunities and better share the burden of outreach among PIRCA partners.**

- Pacific RISA stakeholders and collaborators have suggested a range of additional outreach opportunities, some quite specific, that offer important ways to continue to illustrate the policy-relevance of the PIRCA (see specific recommendations on pp. 34-35).
- As the media analysis and repeat appearance of Pacific RISA staff (particularly, V. Keener) illustrates, the Pacific RISA has carried the lion share of outreach to date. Strategic division of labor among the key PIRCA partners would lessen this uneven burden and give other PIRCA partners greater visibility for their role and contribution to the PIRCA report and process.

**(5) Use specific stakeholder suggestions to shape future Pacific RISA and partner research and assessment agendas.**

- Stakeholders have a great hunger for more information, much of it increasingly focused on the economic impacts of climate change, human security issues, adaptation options, and cultural implications of climate change (for specific suggestions see pp. 36-38)

**(6) Work with Senator Schatz's office, NCA and NCADAC on sustaining the assessment.**

- The value of the PIRCA is expressed in the desire among users for regular updates. To make this possible, there is a clear need for support the assessment leaders and contributing partners more substantially. An opportunity exists with Senator Schatz's office to lobby for such support in Congress. The NCADAC and the NCA Central Coordination Office would be extremely interested in working together to pursue this opportunity.

**Concluding Personal Note**

While this evaluation is clearly proprietary, and it is entirely up to you how much, if anything, is shared with others and in what ways, the success of the process you have lead from start to its current stage (there is no finish!), and the resulting impact you have had, is simply exemplary. While conducting this evaluation, the recurring sentiment on the part of this evaluator anyway was, "I wish I could share this with others." I strongly encourage you to consider how you can share your successes with the NCADAC, the coordinating office, Kathy Jacobs, and of course the larger RISA community, so that others may learn from your profoundly skillful leadership and indefatigable efforts. It has been a pleasure to do this evaluation, seeing again and again the value of such a systematic review, and to share these results with you. But most of all, I want to thank you – on behalf of the NCADAC – for your amazing and continuing work on behalf of the National Assessment and the people you have touched.

## **7. Acknowledgments**

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completed without the participation of key informants willing to be interviewed and the survey participants taking time to provide responses to the questionnaire. None of them are responsible for the contents of this report, and all interpretations of the data and information obtained are my own.

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## Appendices

### Appendix A: PIRCA Press Coverage

Date	Source	Type	Link	Headline
12/4/2012	Targeted News Service	Press release	<a href="http://www.eastwestcenter.org/news-center/news-releases/the-pacific-islands-regional-climate-assessment-releases-collaborative-report">http://www.eastwestcenter.org/news-center/news-releases/the-pacific-islands-regional-climate-assessment-releases-collaborative-report</a>	The Pacific Islands Regional Climate Assessment Releases Collaborative Report on Climate Change
12/4/2012	DOI News	Press release	<a href="http://www.doi.gov/csc/pacific/news/pacific-islands-regional-climate-assessment-report-released.cfm">http://www.doi.gov/csc/pacific/news/pacific-islands-regional-climate-assessment-report-released.cfm</a>	Pacific Islands Regional Climate Assessment Report Released
12/7/2012	William J. Perry Center for Hemispheric Defense Studies	Forum announcement	<a href="https://chdsnet.org/news-story/pacific-islands-regional-climate-forum">https://chdsnet.org/news-story/pacific-islands-regional-climate-forum</a>	Pacific Islands Regional Climate Forum
12/9/2012	Honolulu Star Advertiser	Newspaper Op-ed	<a href="http://www.staradvertiser.com/s?action=login&amp;f=y&amp;id=182708691&amp;id=182708691">http://www.staradvertiser.com/s?action=login&amp;f=y&amp;id=182708691&amp;id=182708691</a>	Climate change is real threat to Hawaii (M. Finucane)
12/10/2012	KHON TV News at 5	TV interview	<a href="#">link to clip missing at PIRCA website</a>	TV interview of PIRCA researchers
12/10/2012	The Honolulu Star-Advertiser	Newspaper	<a href="http://www.staradvertiser.com/s?action=login&amp;f=y&amp;id=182777211&amp;id=182777211">http://www.staradvertiser.com/s?action=login&amp;f=y&amp;id=182777211&amp;id=182777211</a>	Climate-change scientists predict sea to rise 1 foot by 2050
12/10/2012	East-West Center	Press release	<a href="http://www.eastwestcenter.org/events/pacific-islands-regional-climate-forum">http://www.eastwestcenter.org/events/pacific-islands-regional-climate-forum</a>	Pacific Islands Regional Climate Forum
12/10/2012	CNMI Climate Change Working Group	Blog	<a href="http://www.climatecnmi.net/2012/12/2012-pacific-islands-regional-climate.html">http://www.climatecnmi.net/2012/12/2012-pacific-islands-regional-climate.html</a>	2012 Pacific Islands Regional Climate Assessment (PIRCA) Now Available

12/14/2012	PacificVoyagers.org (Pacific Voyagers Foundation)	Blog	<a href="http://pacificvoyagers.org/new-report-on-pacific-islands-climate-change-includes-major-concerns-for-hawaii">http://pacificvoyagers.org/new-report-on-pacific-islands-climate-change-includes-major-concerns-for-hawaii</a>	New Report on Pacific Islands Climate Change Includes Major Concerns for Hawai'i
12/21/2012	Honolulu Star Adviser	LTE	<a href="http://www.staradvertiser.com/editorials/letters/20121221-Letters-to-the-Editor.html?id=184367021">http://www.staradvertiser.com/editorials/letters/20121221-Letters-to-the-Editor.html?id=184367021</a>	Climate change report welcome
1/2/2013	Honolulu Weekly	Magazine	<a href="http://honoluluweekly.com/">http://honoluluweekly.com/</a>	Cover story, titled, "Climate Change in Hawaii: It's Here," features researcher and state administrator perspectives on adapting to the local effects of a changing climate.
1/4/2013	Greenwire	News wire	<a href="http://www.eenews.net/greenwire/stories/1059974349/search?keyword=Full-page+ad+to+urge+Obama+action+on+greenhouse+gases">http://www.eenews.net/greenwire/stories/1059974349/search?keyword=Full-page+ad+to+urge+Obama+action+on+greenhouse+gases</a>	CLIMATE: Full-page ad to urge Obama action on greenhouse gases
1/4/2013	Targeted News Service	News wire	<a href="http://www.lwv.org/press-releases/lwv-releases-ad-hawaii-urging-protect-against-climate-change">http://www.lwv.org/press-releases/lwv-releases-ad-hawaii-urging-protect-against-climate-change</a>	New League Ad Urges Obama Action on Climate
1/4/2013	USNEWS.com	Web Publication-NEWS; Washington Whispers; Blog	<a href="http://www.usnews.com/news/blogs/washington-whispers/2013/01/04/full-page-ad-to-appear-in-hawaiian-newspaper-pressuring-obama-on-climate-change">http://www.usnews.com/news/blogs/washington-whispers/2013/01/04/full-page-ad-to-appear-in-hawaiian-newspaper-pressuring-obama-on-climate-change</a>	Full Page Ad To Appear in Hawaiian Newspaper Pressuring Obama On Climate Change
1/5/2013	The Honolulu Star-Advertiser Distributed by McClatchy-Tribune Business News	Newspaper	<a href="http://www.pacificcrisisa.org/wp-content/uploads/2012/01/Honolulu-Star-Advertiser-Group-urges-Obama-to-act-Web.pdf">http://www.pacificcrisisa.org/wp-content/uploads/2012/01/Honolulu-Star-Advertiser-Group-urges-Obama-to-act-Web.pdf</a>	Group urges Obama to act on climate change
1/7/2013	ClimateWire TODAY'S STORIES Vol. 10 No. 9	News wire	<a href="http://www.eenews.net/cw/2013/01/07">http://www.eenews.net/cw/2013/01/07</a>	STATES: Hawaii may feel stronger climate change impacts



1/16/2013	Targeted News Service	News wire	<a href="http://www.eastwestcenter.org/news-center/news-releases/pacific-islands-regional-climate-assessment-be-focus-climate-services-foru">http://www.eastwestcenter.org/news-center/news-releases/pacific-islands-regional-climate-assessment-be-focus-climate-services-foru</a>	Pacific Islands Regional Climate Assessment to Be a Focus of Climate Services Forum in Fiji
1/16/2013	ReliefWeb	Press release	<a href="http://reliefweb.int/report/fiji/pacific-islands-regional-climate-assessment-be-focus-climate-services-forum-fiji">http://reliefweb.int/report/fiji/pacific-islands-regional-climate-assessment-be-focus-climate-services-forum-fiji</a>	Fiji: Pacific Islands Regional Climate Assessment to Be a Focus of Climate Services Forum in Fiji
1/20/2013	Thinkprogress.org	Blog	<a href="http://thinkprogress.org/immigration/2013/06/20/2187831/climate-refugee-immigration-bill/">http://thinkprogress.org/immigration/2013/06/20/2187831/climate-refugee-immigration-bill/</a>	Amendment Would Give Legal Status To People Displaced By Climate Change
2/14/2013	PBS Hawaii "Insights"	TV	<a href="http://www.youtube.com/watch?v=7ghy7ArhCvg&amp;feature=player_embedded">http://www.youtube.com/watch?v=7ghy7ArhCvg&amp;feature=player_embedded</a>	Hour-long PBS show on climate change, featuring scientists and practitioners; mentions the PIRCA report and the Fiji forum
2/19/2013	Targeted News Service	News wire	<a href="http://www.hawaii.edu/news/article.php?ald=5574">http://www.hawaii.edu/news/article.php?ald=5574</a>	Center for Pacific Islands Studies Hosts Climate Change Conference
2/19/2013	US Fed News	News wire	also at: <a href="http://www.pacificclimatechange.net/">http://www.pacificclimatechange.net/</a>	Center for Pacific Islands Studies Hosts Climate Change Conference
2/19/2013	Honolulu Civil Beat	Blog (based on UH press release)	<a href="http://hawaii.education.blogs.civilbeat.com/post/43517850184/uh-manoa-to-host-climate-change-conference">http://hawaii.education.blogs.civilbeat.com/post/43517850184/uh-manoa-to-host-climate-change-conference</a>	Center for Pacific Islands Studies Hosts Climate Change Conference
2/26/2013	Congressional Documents and Publications	Rep. Tulsi Gabbard (D-HI) News Release	<a href="http://gabbard.house.gov/media-center/press-releases/rep-tulsi-gabbard-sequestration-will-prevent-progress-on-climate-change">http://gabbard.house.gov/media-center/press-releases/rep-tulsi-gabbard-sequestration-will-prevent-progress-on-climate-change</a>	Rep. Tulsi Gabbard: Sequestration Will Prevent Progress on Climate Change; Highlighted Hawai'i Climate Change Impacts on the Big Island and Oahu;
2/26/2013	Targeted News Service	News wire	<a href="http://www.highbeam.com/doc/1G1-320430236.html">http://www.highbeam.com/doc/1G1-320430236.html</a>	Rep. Tulsi Gabbard: Sequestration Will Prevent Progress on Climate Change
3/1/2013	Islands Business	Online news story	<a href="http://www.islandsbusiness.com/2013/3/politics/un-forum-partners-pushed-on-climate-change/">http://www.islandsbusiness.com/2013/3/politics/un-forum-partners-pushed-on-climate-change/</a>	UN, Forum partners pushed on climate change: Marshalls wants issue a global security problem
4/5/2013	The Senate State Capitol Honolulu, HI	Press Release	<a href="http://www.kalanienglish.com/pressrelease_130405.php">http://www.kalanienglish.com/pressrelease_130405.php</a>	Conference Discusses Impacts of Climate Change in the Pacific Islands

4/5/2013	Hawaiisenatemajority.com	Conference announcement	<a href="http://www.hawaiisenatemajority.com/2013/04/conference-discusses-impacts-of-climate-change-in-the-pacific-islands/">http://www.hawaiisenatemajority.com/2013/04/conference-discusses-impacts-of-climate-change-in-the-pacific-islands/</a>	Conference Discusses Impacts of Climate Change in the Pacific Islands
4/11/2013	Honolulu Civil Beat	Blog (video interview)	<a href="http://www.civilbeat.com/articles/2013/04/02/18731-video-does-more-need-to-be-done-about-climate-change-in-hawaii/">http://www.civilbeat.com/articles/2013/04/02/18731-video-does-more-need-to-be-done-about-climate-change-in-hawaii/</a>	Does More Need To Be Done About Climate Change in Hawaii?
5/20/2013	PacRISA News blog	Blog (interview)	<a href="http://www.pacificrisa.org/2013/05/20/how-can-social-network-analysis-help-us-strengthen-information-sharing-in-the-pacific/">http://www.pacificrisa.org/2013/05/20/how-can-social-network-analysis-help-us-strengthen-information-sharing-in-the-pacific/</a>	Can Network Analysis Strengthen Information Sharing in the Pacific?
6/6/2013	Bloomberg BNA	Blog	<a href="http://www.bna.com/closer-look-draft-b17179874376/">http://www.bna.com/closer-look-draft-b17179874376/</a>	A Closer Look at the Draft National Climate Assessment: Low-Lying Islands Face Migration, Hawaii Likely to Lose Billions in Tourism Dollars
9/18/2013	PacRISA News blog	Blog	<a href="http://www.pacificrisa.org/2013/09/18/congressional-briefing-by-pacific-risa-on-capitol-hill/">http://www.pacificrisa.org/2013/09/18/congressional-briefing-by-pacific-risa-on-capitol-hill/</a>	Congressional Briefing by Pacific RISA on Capitol Hill
10/16/2013	PacRISA News blog	Blog	<a href="http://www.pacificrisa.org/2013/10/16/climate-change-and-pacific-island-leadership/">http://www.pacificrisa.org/2013/10/16/climate-change-and-pacific-island-leadership/</a>	Climate Change and Pacific Island Leadership

Appendix B: PIRCA Web Listings (Based on Web Search December 2012-September 2013)

Date	Source	Type	Link	Headline
8/20/2012	coralreef.gov	pdf of presentation	<a href="http://www.coralreef.gov/meeting28/pdf/pircaspooner.pdf">http://www.coralreef.gov/meeting28/pdf/pircaspooner.pdf</a>	Pacific Islands Regional Climate Assessment (Spooner)
12/10/2012	LAMA (Loli Aniau, Maka'ala Aniau; Climate Change, Climate Alert)	List of climate science resources, incl. PIRCA report	<a href="http://www.islandclimate.net/island-climate-clearinghouse/climate-science-resources/">http://www.islandclimate.net/island-climate-clearinghouse/climate-science-resources/</a>	Climate Science Resources
1/1/2013	PacificIslandParks.com	Web release	<a href="http://pacificislandparks.com/2013/01/01/new-regional-climate-change-report-published/">http://pacificislandparks.com/2013/01/01/new-regional-climate-change-report-published/</a>	New Regional Climate Change Report Published
1/1/2013	Scholarspace at Hawaii.edu (University of Hawai'i at Manoa Hamilton Library)	Full report	<a href="http://scholarspace.manoa.hawaii.edu/handle/10125/26949">http://scholarspace.manoa.hawaii.edu/handle/10125/26949</a>	Climate change and Pacific islands : indicators and impacts : report for the 2012 Pacific Islands Regional Climate Assessment (PIRCA)
1/2/2013	Globalchange.gov	Web announcement	<a href="http://scenarios.globalchange.gov/report/regional-climate-trends-and-scenarios-us-national-climate-assessment-part-8-climate-pacific">http://scenarios.globalchange.gov/report/regional-climate-trends-and-scenarios-us-national-climate-assessment-part-8-climate-pacific</a>	Regional Climate Trends and Scenarios for the U.S. National Climate Assessment. Part 8. Climate of the Pacific Islands
1/2/2013	NCA	pdf notice of technical report	<a href="http://scenarios.globalchange.gov/report/regional-climate-trends-and-scenarios-us-national-climate-assessment-part-8-climate-pacific">http://scenarios.globalchange.gov/report/regional-climate-trends-and-scenarios-us-national-climate-assessment-part-8-climate-pacific</a>	NOAA Technical Report NESDIS 142-8: Regional Climate Trends and Scenarios for the U.S. National Climate Assessment
3/1/2013	East West Center	pdf of presentation	<a href="http://drought.unl.edu/Portals/0/docs/workshops/USD%20Forum%202013/Thursday/Corlew%20USD%20Presentation.pdf">http://drought.unl.edu/Portals/0/docs/workshops/USD%20Forum%202013/Thursday/Corlew%20USD%20Presentation.pdf</a>	Pacific Possessions: The Challenges of Drought on the Islands (Corlew)
3/20/2013	Climate.gov NOAA	Web announcement	<a href="http://www.climate.gov/climate-and-energy-topics/impacts-climate-change-0?page=3">http://www.climate.gov/climate-and-energy-topics/impacts-climate-change-0?page=3</a>	Climate Change and Pacific Islands: Indicators and Impacts

3/30/2013	Briefing to the Commission on Water Resource Management	Video of presentation	<a href="http://vimeo.com/64102723">http://vimeo.com/64102723</a>	2013/03/20 Pacific Regional Integrated Sciences and Assessments (Pacific RISA), Pacific Islands Regional Climate Assessment (PIRCA) (Keener)
No date	PacCIS	Report	<a href="http://www.pacificcis.org/">http://www.pacificcis.org/</a> (direct link to report & to <a href="http://www.PacificIslandsClimate.org">www.PacificIslandsClimate.org</a> )	
no date	Island Press	Book website	<a href="http://islandpress.org/ip/books/book/distributed/C/bo9111728.html">http://islandpress.org/ip/books/book/distributed/C/bo9111728.html</a>	Climate Change and Pacific Islands: Indicators and Impacts
no date	Cakex	pdf of report	<a href="http://www.cakex.org/sites/default/files/document/Exec-Summary-PIRCA-FINAL2.pdf">http://www.cakex.org/sites/default/files/document/Exec-Summary-PIRCA-FINAL2.pdf</a>	Climate Change and Pacific Islands: Indicators and Impacts Executive Summary of the 2012 Pacific Islands Regional Climate Assessment (PIRCA)
no date	PacificIslandsClimate.org	List of reports/resources relevant to Pacific Islands	<a href="http://www.pacificislandsclimate.org/asmts/">http://www.pacificislandsclimate.org/asmts/</a>	Climate Change and Pacific Islands: Indicators and Impacts

## Appendix C: PIRCA Evaluation Survey Instrument

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### PIRCA SURVEY 2013

Final 9-30-13

#### Information for Consent to Participate in a Research Study

**Purpose of the Survey:** This survey is part of the ongoing efforts of the Pacific Regional Integrated Sciences and Assessments (RISA) program to evaluate its effectiveness in informing the public, policy-makers, resource managers and other interested stakeholders about climate change and potential impacts on Hawai'i and the Pacific region. Pacific RISA is funded by the National Oceanic and Atmospheric Administration (NOAA).

The research is undertaken by an independent, external evaluator, Dr. Susanne Moser, and we hope that you will be frank and forthcoming in offering your personal views.

The survey has 20 brief questions and will take approximately 10-15 minutes to complete. We very much appreciate you taking the time to provide your feedback. It will help us serve you and other stakeholders better in the future.

This survey will be open through Wednesday, October 16.

**Benefits and Risks:** Results of this study will be used to help us understand the value of the Pacific Islands Regional Climate Assessment (PIRCA) in addressing the climate information needs of decision makers; inform future research and the development of useful information and services; and guide stakeholder engagement activities. Loss of privacy from survey forms is a potential but very small risk. All information about you will be kept private to the best of our ability. Your identity will not be revealed in any publication or release of results. You will not be compensated for your participation in this study.

**Voluntary Nature of the Study:** Participation in this study is voluntary. You may refuse to answer any question or end the survey without answering all questions. A completed survey is the most useful to the researchers involved in this study. If you exit the survey without finishing, it will save your responses. You can return simply by clicking on the link in the invitation email. All answers will be collected securely online, and then analyzed and synthesized in a summary report to the Pacific RISA and its funders. No individual responses can be traced back to you, the survey participants.

**Confidentiality:** Your responses will be kept confidential. When responses from this survey are reported, individuals will not be identified. The records of this study will be kept private and no-one other than project staff will have access to your responses.

**Contacts and Questions:** If you have questions or concerns about the research, please contact the Principal Investigator, Dr Susanne Moser, Director and Principal Researcher of Susanne Moser Research and Consulting, Santa Cruz CA; promundi [at] susannemoser.com or [REDACTED] (tel). You may also contact the East-West Center Institutional Review Board Administrator, Ms Melinda Wood at [REDACTED] (tel). [Note: Phone numbers have been blacked out for the purposes of this report.]

**Section I: The Pacific Islands Regional Climate Assessment (PIRCA) Report**

The Pacific Islands Regional Climate Assessment (PIRCA) is a collaborative effort aimed at assessing climate change indicators, impacts, and adaptive capacity of the Hawaiian archipelago and the US-Affiliated Pacific Islands. PIRCA engages federal, state, and local government agencies, non-government organizations, academia, businesses, and community groups to inform and prioritize their activities in the face of a changing climate.

**1. Have you heard of the PIRCA report?**

- yes
- no
- not sure

**2. Have you read any portion of the PIRCA report?**

- yes [If you answered yes, please go on to **Question 3**]
- no [If you answered no, please go on to **Question 11**]
- not sure [If you answered not sure, please go on to **Question 11**]

**3. Please indicate which parts of the PIRCA report you scanned, read, or remember most (mark all that apply).**

- Executive Summary
- Chapter 1: Regional Overview
- Chapter 2: Freshwater and Drought on Pacific Islands
- Chapter 3: Sea Level and Coastal Inundation on Pacific Islands
- Chapter 4: Marine, Freshwater and Terrestrial Ecosystems on Pacific Islands
- Chapter 5: Conclusions
- Case Studies

**4. Please rate how interesting the sections of the report were to you (do this for all parts that you scanned, read or remember).**

	Not at all interesting	Not very interesting	Somewhat interesting	Extremely interesting	Don't recall
Executive Summary					
Chapter 1: Regional Overview					
Chapter 2: Freshwater and Drought					
Chapter 3: Sea Level and Coastal Inundation					
Chapter 4: Marine, Freshwater & Terrestrial Ecosystems					
Chapter 5: Conclusions					
The report as a whole					
Case Studies					

5. Please rate how useful the sections of the report were to you (do this for all parts that you scanned, read or remember).

	Not at all useful	Not very useful	Somewhat useful	Extremely useful	Don't recall
Executive Summary					
Chapter 1: Regional Overview					
Chapter 2: Freshwater and Drought					
Chapter 3: Sea Level and Coastal Inundation					
Chapter 4: Marine, Freshwater & Terrestrial Ecosystems					
Chapter 5: Conclusions					
The report as a whole					
Case Studies					

6. If you checked "somewhat useful" or "extremely useful" in Question 5, please tell us in a few words how the report, or any section of it, was useful to you.

[box for respondents to write in answer]

7. If you checked "not at all" or "not very" useful in Question 5, please tell us in a few words how the report, or any sections of it, could have been more useful to you.

[box for respondents to write in answer]

8. Please indicate what you have done with the PIRCA report since you received it. (Mark all that apply)

- Kept it on file/shelf as a resource for myself
- Passed it on to a colleague
- Put it in our office library
- Use it occasionally in my daily work
- Refer to it regularly
- Sent it to my boss
- Sent it to a political representative
- Gave one or more presentations in which I used information from the PIRCA
- Recycled it
- Other (please fill in) [make a box for people to write in answer]

**9. Nearly 100 experts and many different organizations from across the Pacific region contributed to the PIRCA. How would you judge the credibility of the PIRCA report?**

Not at all credible	Not very credible	Somewhat credible	Extremely credible	Can't say

**10. What additional aspects and sectors of life in the Pacific Islands should be assessed in future assessment efforts?** (Please note down 1-3 other sectors, focus areas, or vulnerable areas you wish to see assessed.)

My top priority \_\_\_\_\_ [box for respondents to write in answer]  
 My next priority \_\_\_\_\_ [box for respondents to write in answer]  
 My next priority \_\_\_\_\_ [box for respondents to write in answer]

**Section II: Publicity and Engagement around the PIRCA Report**

**11. How did you first hear about the PIRCA report?** (Please mark only one answer)

- Email notification from the Pacific RISA
- Email notification from another PIRCA partner
- Email from a colleague
- Heard about it in the newspapers
- Heard about it on TV
- Heard about it on the internet
- Heard about it at a PIRCA release event (workshop)
- Attended a presentation where Pacific RISA introduced the PIRCA
- Was briefed about the PIRCA by Pacific RISA
- Don't recall

**12. Did you participate in any of the following events?** (Please mark all that apply)

- PIRCA Forum, Honolulu HI, December 10, 2012 [If you attended this event, please go onto Question 13]
- Hawaii Commission on Water Resources Management (CWRM) meeting, March 20, 2013, Honolulu, HI. [If you attended this event, please go on to Question 13]
- Pacific Risk Management Ohana (PRiMO) conference, Honolulu HI, March 13, 2013 [If you attended this event, please go on to Question 13]
- Don't recall [Please go on to Question 17]

**13. How would you rate the value of the event you attended?**

Not at all valuable	Not very valuable	Somewhat valuable	Extremely valuable	Don't know



**14. If you checked "somewhat valuable" or "extremely valuable" in Question 13, please rate what aspects of it were valuable to you. (Please check all that apply)**

- Learning about climate change vulnerabilities and potential impacts in the Pacific region
- Learning about potential adaptation options in the region
- Opportunity to ask questions of the experts
- Opportunity to network with other people
- Opportunity to be in dialogue with people about what to do
- Opportunity to learn what others are doing about climate change
- Opportunity for political strategizing
- Other (Please fill in) [make a box for people to write in answer]

**15. If you checked "not at all" or "not very" valuable in Question 13, please tell us in a few words how the event could have been more valuable to you.**

[box for respondents to write in answer]

**16. Are there other opportunities you see where the Pacific RISA should talk about the PIRCA findings?**

[box for respondents to write in answer]

### Section III: Survey Participant Information

The following questions are optional but your answers will help the Pacific RISA to better understand how they can serve you better in the future.

**17. Please tell us where you are based.**

- Hawai'i
- Guam
- Commonwealth of the Northern Marianas
- Federated States of Micronesia
- Republic of Palau
- Republic of the Marshall Islands
- American Samoa
- Fiji
- Other

**18. What organization or entity do you work for?**

- Federal agency
- State assembly
- State agency
- County government
- Private sector
- Non-governmental organization
- University
- K-12 schools

\_\_ Other (please specify) [make a box for people to write in an answer]

**19. How many years have you worked in your current place of work?**

\_\_ 0-1      \_\_ 1-3      \_\_ 3-5      \_\_ > 5 years

**20. How many years have you worked on climate change?**

\_\_ 1-3      \_\_ 3-5      \_\_ 5-10      \_\_ > 10 years

## Appendix D: PIRCA Evaluation Interviewees

Name	Organization
Nathalie Morison	Planner, Hawai'i Office of Planning, Dept. of Business, Economic Development, and Tourism
Leo Acuncion	Manager of the Hawai'i Coastal Zone Management Program, Office of Planning, Dept. of Business, Economic Development, and Tourism
Dale Hahn	Senior Policy Advisor to Brian Schatz, former Lieutenant Governor of Hawai'i, now U.S. Senator
Ryan Martel	Energy Policy Advisor to Brian Schatz, former Lieutenant Governor of Hawai'i, now U.S. Senator
Tim Torma	EPA Fellow, on detail to Brian Schatz's office, former Lieutenant Governor of Hawai'i, now U.S. Senator
Scott Hauger	Associate Professor, Asia-Pacific Center for Security Studies
Gary Gill	Deputy Director, Environmental Planning Office, Hawai'i Dept. of Health
Rep. Cynthia Thielen	Hawai'i State Representative, District 50
Rep. Chris Lee	Hawai'i State Representative, District 51
Lenore Ohye	Hydrological Planning Program Manager, Hawai'i Commission on Water Resources Management
Neal Fujii	State Drought Coordinator, Hawai'i Commission on Water Resources Management
Mark Fox	Director of External Affairs, The Nature Conservancy
Olai Uludong	Lead Negotiator for the Alliance of Small Islands States, United Nations
Reggie White	Meteorologist in Charge, NOAA National Weather Service, WSO Majuro
Anthony Ching	Senior Legislative Assistant, Rep. Tulsi Gabbard, U.S. Representative, Hawai'i, District 2

## Appendix E: PIRCA Evaluation Interview Protocol

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### PIRCA INTERVIEW SCHEDULE 2013 [Final 9-29-13]

#### Section I: The Pacific Islands Regional Climate Assessment (PIRCA) Report

The Pacific Islands Regional Climate Assessment (PIRCA) is a collaborative effort aimed at assessing climate change indicators, impacts, and adaptive capacity of the Hawaiian archipelago and the US-Affiliated Pacific Islands. PIRCA engages federal, state, and local government agencies, non-government organizations, academia, businesses, and community groups to inform and prioritize their activities in the face of a changing climate.

21. Have you heard of the PIRCA report?
22. Have you read any portion of the PIRCA report?
23. Which parts of the PIRCA report have you scanned, read, or do you remember most?  
How interesting were the sections of the report to you? In what way?
24. How useful were the sections of the report to you? How so?
25. Is there any way in which you were hoping the PIRCA report would be more useful to you? How so?
26. How have you used the PIRCA report since you received it? (probe: quantifiable?)
27. Has the PIRCA report changed any of your decisions or decision processes?
28. Nearly 100 experts and many different organizations from across the Pacific region contributed to the PIRCA. How would you judge the credibility of the PIRCA report?
29. What additional aspects and sectors of life in the Pacific Islands should be assessed in future assessment efforts?

#### Section II: Publicity and Engagement around the PIRCA Report

30. Do you recall how you first heard about the PIRCA report?
31. Did you participate in any PIRCA release events? Which ones?
32. How valuable was that event for you? How so? (probe as in survey question 14)
33. Were you hoping to get anything from that event that you didn't get from it?

#### Section III: Future Directions and Information Needs

34. The PIRCA couldn't cover everything. What would you like to see being assessed in future assessment efforts?
35. Is there any way in which this kind of information could be made more useful to you?
36. Any other comment on the PIRCA or what you think needs to be done in terms of information on climate change for the Pacific region?