



TALK STORY SUMMARY

Kaua'i Climate Adaptation Plan
May 13, 2022

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Talk Story Process

PROTOCOL

The County of Kaua'i Resiliency Team conducted talk stories with 36 individuals representing 26 community groups, including groups that may be disproportionately affected by climate change hazards and may not typically get involved in the planning process. The purpose of these talk story conversations was to establish a relationship with these community groups and hear their concerns, perceptions, knowledge, and experiences with respect to climate change on the island. The talk stories were conducted from November 2021 to January 2022 as part of the Climate Adaptation Plan's pre-planning stage, in which the community's input will inform the design of the Climate Adaptation Plan's engagement process.

The talk stories focused on the following four main topic areas:

- Resiliency and adaptation
- Emergency Preparedness
- Kaua'i's future
- Community Engagement.

In preparation for the talk stories, a list of questions was prepared beforehand to allow for greater consistency amongst the various conversations. However, to allow for a more authentic discussion and enhance two-way communication between the community and County members, the questions acted as an informal guide in which conversations could stray from. The list of questions is provided in Appendix C: Talk Story Guide.

PARTICIPANTS

The County of Kaua'i Resiliency Team, which consists of 11 County staff from the Planning Department, Office of Economic Development, Kaua'i Emergency Management Agency (KEMA), Mayor's Office, and Hawai'i Sea Grant, compiled a list of community groups to reach out to for the talk story phase. This included, but was not limited to, groups that could speak to the concerns and engagement of youth, migrant populations, low-income and houseless, lineal descendants, LGBTQ+, and elderly. Snowball sampling was also used to identify individuals to reach out to for a talk story.

Talk stories included representatives from the following stakeholder groups:

- 'Āina Ho'okupu o Kīlauea (AHK)
- Farmer from the East side of Kaua'i
- Hawai'i Alliance for Progressive Action (HAPA)
- Hawai'i Islands Land Trust (HILT)
- Hui Maka'āinana o Makana
- Hui Mālama Kāneiolouma
- Hui Mālama Polihale
- Island School
- Kamehameha Schools
- Kanuikapono Public Charter School
- Dr. Kapua L. Chandler, School Leader for Namahana School
- Kaua'i Community College Nā Pua No'eau

- Kauaʻi Community College Sustainability Committee
- Kauaʻi Community Science Center
- Kilauea Neighborhood Association
- Koloa Neighborhood Association
- Koʻolau Limu Project
- Kukona Ola
- Mālama Kauaʻi
- Marshallese Association of Kauai
- Dr. Mehana Blaich Vaughan, North Shore Community Member and Associate Professor at the University of Hawaiʻi Mānoa and U.H. Sea Grant
- Nā Maka Onaona
- Royal Order of Kamehameha I
- The Hanalei Initiative
- YWCA

Summary of Responses

The following is a summary of the key themes that came out of the talk stories with community groups. The responses are based on the notes written by County staff in real time. Some comments were also submitted to the County staff in writing. Unique, but important, comments are included in “Other comments.”

RESILIENCE AND ADAPTATION

The themes compiled under this focus topic area delve into the most concerning climate impacts; vulnerable assets and resources; and issues and opportunities in moving forward with adaptation planning.

Climate Impacts

The most concerning climate change impacts mentioned by talk story participants are (1) Storms and Floods, (2) Sea Level Rise and Coastal Hazards, and (3) Heat.

Storms and flooding

An increase in the frequency and intensity of storm and rain events was the most noted (n=19) climate change hazard mentioned by talk story participants. Community members described their own experience with storm and flood events and relayed their observations of stream flow and changes in coastal ecosystems during these events.

- A common phrase amongst talk story participants was, “the wet is wetter and the dry is drier.”
- More intense heavy rain events are particularly concerning for Kauai’s east and north shore.
- Talk story participants noted that in their lifetime they have observed rain and storm events to be more unpredictable, frequent, and severe over time.
- Participants observed an increase in landslides on the north shore due to intense and more frequent rain events.
- One participant expressed concern regarding changing wind patterns, and its connection to rain events. They felt that changes in trade winds can lead to mugginess, leading to more monsoon-like weather.
- Landslides, sediment runoff, coastal erosion, and dam clogs and breaks resulting from heavy rain events were noted as a concern. Ecological concerns regarding the removal of vegetation, aquatic life, and critical habitat for native species during flooding events was also expressed.
- Flooding impacts housing situations. One participant stated that heavy rain can enter the ground floor of some public housing. Another participant relayed that some property owners now need sandbags at hand every time there is a rain event.
- Kauai’s communities are now much more aware of and prepared for the danger of storms and heavy rain events. However, some participants felt that given the changing composition of the community, it is unlikely that the community will be able to rebound as quickly as they did after Hurricane Iniki hit.
- There is less foliage to absorb the excess runoff during heavy rain.

Sea Level Rise and Coastal Hazards

This was the second most noted climate change hazard mentioned by talk story participants, with 17 people sharing that they have personally experienced and/or are concerned about sea level rise.

- Participants expressed that they have observed high tide events being more intense and frequent over time, increased coastal erosion, and flanking effects.
- Tradeoffs between protection of private property and preservation of beach for public uses (e.g. subsistence and recreational values) will be exacerbated as sea level rises.
- Talk story participants emphasized concern regarding the loss of beach due to sea level rise, and the inability for beach ecosystems to migrate landward due to privatization and hardening of the shoreline to protect development. Four participants expressed how privatization and sea level rise impacts make it difficult to traverse to fishing grounds. As sea level rises, the space between the ocean and property line narrows, which affects how fisherpeople access their sites, how they can fish, and where they can fish. Seawalls change the fishing dynamics.
- Several (n=3) participants shared their concerns of losing recreational and social gathering areas, in which families can picnic, from rising sea levels.
- The impacts of sea level rise and associated coastal hazards are already affecting people's livelihoods.
- One talk story participant explained that limu (seaweed) gathering has changed over the years due to changing ecosystem conditions that are partly due to human actions as well as climate change. They explained that the area where the limu growing cages are typically placed are now experiencing larger swells, which result in the cages rolling around and a small limu harvest.
- Rising sea levels are causing salt water intrusion, which is impacting farming.
- Two talk story participants expressed being concerned about salt water inundation's impact on coastal agriculture, especially in lo'i kalo. A farmer explained how Niumalu lo'i are being inundated with brackish water. Another participant talked about how the kalo grown in these inundated areas taste different.
- Towns are primarily in flood zones (including areas projected to be impacted by sea level rise), while mauka (inland) areas are Conservation lands, which makes it difficult to find safe locations for real estate.
- Changes in sea level in relation to ancient structures, such as fishponds, can provide a better localized understanding of sea level rise.
- Retreat opportunities and the process in retreating development on Kaua'i needs to be explored and mapped out.
- In exploring climate change adaptation strategies, the CAP needs to consider that birds that rely on Papahānaumokuākea for habitat may seek refuge on the Main Hawaiian Islands, including Kaua'i, as sea level rises.

Heat

Increasing temperatures has led to drier forests, bleached coral, and have created conditions that stress native species and plants.

- Seven talk story participants stressed that preserving healthy waterways (e.g. streams and rivers) and estuaries is critical to mitigating a warming ocean by allowing cool, nutrient-rich fresh water to enter the ocean.
- One participant explained their observations of a warming ocean and expressed concern for the species that rely on healthy estuaries and nearshore ocean ecosystems as part of its life cycle. Cages to collect limu must now be placed further out into the ocean because the nearshore water is too warm. In addition, they have observed an increase of a seaweed species that is contributing to the calcium loss of the ocean, indicating a change in nearshore water chemistry. They have also observed an increase in coral bleaching.
- Increased temperatures have changed ecological habitats in a way which threatens native populations. For instance, in the past ten years one talk story participant observed that the Alaka'i swamp is drying up and there are new pests there.
- Farmers have observed drier conditions and expressed concern over warming temperatures threatening food security.

Assets and resources vulnerable to climate change hazards

The vulnerable assets and resources mentioned by participants include (1) Roads and Circulation (2) Streams and Rivers, (3) Parks and Beach Access, (4) Wastewater Systems, (5) Native Species, (6) Agriculture, (7) Cultural Resources and Sites, and (8) 'Ōpala (waste).

Roads and circulation

Thirteen talk story participants expressed concern about Kauai's roads being threatened by sea level rise, heavy rain and storm events:

- There is particular concern for the transportation supply chain and for public safety.
- Shipping is already costly and will continue to be an issue as air/seaport facilities face impacts related to climate change.
- Road sections which participants viewed as being particularly vulnerable include the Kuhio Highway backing Wailua Beach, the road down by Anini Beach, Lawai Road, and the road along Hanalei River.
- Traffic is a current issue and the vulnerability of the road to sea level rise, heavy rain, and storm events will further lead to delays. One talk story participant suggested limiting rental vehicles and provide more public transportation to alleviate traffic issues.
- Talk story participants described the response to extreme and chronic events impacting the road being "ad hoc", with hardening the shoreline or installing temporary hardening (e.g. sandbags) measures being the typical response utilized to address the threatened road.
- Two talk story participants emphasized the need to prioritize areas in which the road is vulnerable and planning for those areas.
- Certain places need alternative access routes.
- Two talk story participants also expressed concern of the vulnerability of bridges.

Streams and rivers

Ten participants are concerned about stream and river health. Changes in flora and fauna, lack of maintenance, and diversions have resulted in compromised stream and river ecosystem health:

- Less native vegetation along rivers and an increase in invasive species and debris in 'auwai (ditches) and stream exacerbates flooding impacts.
- Large landowners play an important role in ensuring that streams by their property being cleared.
- There are jurisdictional issues in maintaining cleared streams.
- Participants explained that diverting water changes water flow and water chemistry, which brings "disarray" to the system throughout that watershed and extending into the ocean environment. Four talk story participants emphasized that restoring the natural flow of water will contribute to building a more resilient island and mitigating climate change impacts.

Parks and beach access

Access to sandy beaches and beach parks are of concern to seven participants:

- Participants expressed concern in regard to losing access to transverse to fishing grounds due to sea level rise narrowing beaches (n=4) and rain-event flooding of parking lots (n=1).
- Drainage issues (primarily due to rain events) are already being observed in the coastal parks and parking lots that provide access to the shoreline (n=3).

Wastewater systems

Six talk story participants are concerned about inundation of low-lying cesspools and wastewater systems:

- Many cesspools and injection wells are close to the shoreline.
- Low-lying communities without sewage system are threatened by sea level inundating cesspools.
- Inundation of cesspools are already occurring in some areas. One talk story participant said that they have a cesspool on the property they grew up on, which is located next to a stream, and the effluent is

getting into the water system.

- One talk story participant mentioned that some people are building illegal systems.
- It is not economically feasible for a lot of local families to replace their cesspool system; therefore, transition to septic systems will likely not be successful without significant financial assistance.
- One participant was concerned about the vulnerability of low-lying sewer treatment plants, such as the sewer treatment plant by the Koloa Mill.

Native species

Five talk story participants vocalized concern for native species:

- Three talk story participants have observed loss of native species.
- With warming temperatures there has been an increase in mosquito population and mosquitoes will move upslope, which threatens native bird populations, such as the 'i'iwi and 'apapane.

Agriculture

Climate change hazards pose a significant threat to Kaua'i's agricultural systems, including the ability to farm and fish (n=5):

- Farmers are concerned about repeated flood events, which erodes the top soil. Recovery takes a long time. Repeated events may force farmers to move to higher ground, which would result in increased need for inputs and in higher production costs.
- Agricultural irrigation systems are vulnerable to severe flooding. Flooding impacts the plantation ditch systems and diversions along streams that provide agricultural water.
- Devastating winds and floods greatly impact infrastructure on a farm and is costly.
- Warming temperatures threaten the health, availability, and location of fish, which impacts fisherpeople.
- Drier conditions have already been observed by farmers and they expressed concern regarding the water table being sufficiently refilled to sustain farming practices.
- One farmer expressed concern over the loss of gauging stations. Each stream used to have multiple gauging stations, which were used to monitor how much water to keep or divert in streams. The lack of gauges creates gap in the data. The cost for these ongoing monitors were split between USGS/ feds and plantations.
- Crops that are under increased stress are more vulnerable to different pathogens and pests.
- The proliferation of invasive species is an issue for farmers
- As an industry, agriculture is already under a lot of stress and increasing challenges by climate change further threatens the industry.
- Industrial agriculture practices further threaten food supply by leading to a loss of pollinators and biodiversity.
- Kaua'i's best agriculture lands tend to be low-lying and along stream banks where there are alluvial soils. These areas are the most prone to flooding.
- One talk story participant expressed the opportunity to create more surface water reservoirs to maximize capture and use that during periods of drought.

Cultural features and sites

Loss of access to irreplaceable cultural sites was a concern raised by five participants:

- Two talk story participants expressed particular concern for the Hanapēpē salt ponds. Another participant spoke about the vulnerability of the ancient village site of Nualolo kai on the Nāpali Coast. Both area are vulnerable to coastal hazards given their proximity to the shoreline and its low-lying nature.
- Places considered wahi pana are disappearing, which threatens the revitalization of Hawaiian knowledge and culture.

'Ōpala (waste) and recycling

Four participants expressed concern about Kaua'i's waste accumulation:

- A linear economy follows a 'take-make-consume-dispose' pattern, which leads to environmental degradation and increases climate change vulnerability.
- Kaua'i is particularly sensitive to waste accumulation given the island's size, isolation, and native and

endangered habitat. Population growth and the tourism industry was identified as factors that exacerbate the waste issue.

- Concern was expressed over waste and hazardous toxins seeping into the water table and the ocean as sea level rises.
- Two participants felt that the Kekaha landfill is vulnerable to sea level rise due to the growing rubbish pile and its location.

Other Comments: Vulnerable assets and resources

Aquifer system

Three talk story participants are concerned about the long-term impacts climate change will have on the aquifer system:

- Diminished rainfall is a long-term concern, especially for farmers who rely on aquifers. Percolation takes decades before it reaches aquifers and the lag in collecting and analyzing data to understand recharge as climate changes is concerning.

Housing

Three participants brought up concerns over housing in low-lying coastal areas being vulnerable to sea level rise and coastal hazards:

- One participant stressed that the vulnerability of public housing facilities needs to be examined and planned for accordingly.

Drainage systems

Three participants stressed the need to look at our drainage problems across the island:

- One participant said that there needs to be consideration of the regulatory issues involving drainage (Clean Water Act, NPDES, and other federal regulatory frameworks).
- One participant emphasized that there needs to be a sufficient amount of parking for people, including houseless, that are safely above the flood areas. Parking lots in many areas are low-lying.

Reservoirs

Two talk story participants expressed concern regarding Kauai's reservoirs being overwhelmed by a 100-year rain event and resulting in catastrophic consequences for communities below:

- One participant brought up the devastation from the breaching from the Ka Loko Dam.
- Dam clogging during heavy rain events is an issue.
- One talk story participant expressed concern about a possible dam break in the Waita reservoir, which would threaten the towns. They said that the County should be actively monitoring it.
- Waihohonu and Waikomo Stream flooding.

Issues and opportunities

The talk story discussions raised issues, along with related opportunities, that might be addressed in the plan. They include: (1) Acknowledging and addressing inequity, (2) Moving towards a sustainable economy and systems, (3) Building upon a foundation of Native Hawaiian values and knowledge, (4) Exploring innovative adaptation strategies, (5) Improving community education.

Acknowledge and address Inequity

Those who are low-income and/or houseless will be disproportionately affected by climate change hazards. Furthermore, the lack of affordable housing and the island's high cost of living decreases the island's adaptive capacity and resiliency to climate impacts. Participants expressed a need to consider climate change response through an equity lens to ensure that implementation projects are prioritized in vulnerable communities and avoid climate change maladaptation (n=13).

- Four talk story participants stressed the issue of gentrification. Extreme weather changes outside compels more people to move to Kaua'i, which then takes resources/housing away from locals. Locals and Native Hawaiians are pushed out of their communities.
- Two talk story participants expressed the issue of more people relocating and teleworking in Hawai'i since the start of the pandemic, which takes housing away from locals.
- A couple participants shared concerns about flood insurance rates and are personally impacted by these changes along the Waimea River.
- Domestic violence is a top reason women and kids become houseless. This needs to be considered when ensuring people's safety at evacuation shelters, where their abuser could be at the shelter. Volunteers at shelter facilities aren't necessarily aware of these dynamics.
- Houseless often camp on beaches, making them especially vulnerable to climate change impacts, such as sea level rise, rains, and storms.
- Immigrants from Marshall Islands face many pressing challenges, including language barriers and a lack of basic knowledge on how to access housing, healthcare, and educational resources.
- To create more equitable climate change adaptation outcomes, adaptation actions should be guided and informed by the community's lived experiences and expertise with climate change impacts.
- Two talk story participants expressed how climate change planning and decision-making should be guided based on one's relationship and kuleana to place. The knowledge and values of the people who managed the land the longest (Hawaiians) should be the core and foundation. Next is the local community who also have kuleana. At the next level are transplants (or people who haven't yet demonstrated their investment in the community). Last are transients and tourists.
- Climate change planning should acknowledge its relationship to colonialism and capitalism to ensure equitable adaptation strategies.

Moving towards a sustainable economy and resilient systems

Climate change vulnerability is largely influenced by human impacts on systems (n=13). Kaua'i's dependence on tourism and lack of a diversified economy limits the community's adaptive capacity.

- Nine participants said that the CAP needs to acknowledge that human impacts on the localized level (e.g. seawall construction, building too close to the shoreline, diverting water) are partly to blame for observed changes in addition to global climate change.
- Climate change and capitalism are interconnected. A capitalist economic framework prioritizes growth and acquiring capital.
- Because hotels are primarily located along the coast there is concern that the focus of adaptation will prioritize tourism.
- Issues with managing visitor capacity.
- One talk story participant stressed that militarism and colonialism in Hawai'i go hand in hand, and concern over the pollution emitted by the U.S military.
- While increasing food production to be self-sufficient may be envisioned, this is likely not economically viable given competition with continental and international producers.

Build upon a foundation of Native Hawaiian values and knowledge

The bases of climate change planning, including adaptation planning, in Kaua'i should be rooted in Native Hawaiian cultural values, such as aloha 'āina (love the land), mālama 'āina (to take care of the land), and kuleana (taking personal responsibility). Elevate indigenous sciences to come up with creative, innovative solutions.

- Learn from Hawaiian's social structure. Hawaiians had to rely on each other rather than working

independently from one another.

- Need to orient people from thinking from a consumer-driven colonial system lens to more of an indigenous lens.
- One participant noted that climate change adaptation planning may present value conflicts. They stressed that climate change planning on Kaua'i should be centered in Hawaiian values.
- Five participants expressed there is an opportunity to learn from innovative ancient systems of natural resource management.
- Development of fishponds could be an adaptation strategy
- Hawaiians never built permanent structures at the coast, only temporary structures or buried their iwi kupuna.
- Balancing indigenous knowledge and western knowledge is difficult given that there are major differences in worldviews and value perspectives. Indigenous/Hawaiian worldview focuses on maintaining a healthy relationship with 'āina by closely observing and taking care of 'āina. When combining these two knowledge sources in the same room, should strategically have people who understands and can speak from both a western and indigenous lens.
- Incorporate a mixed methods framework, in which both qualitative and quantitative data are put at the same standard. Elevate experiential knowledge. If kūpuna provides knowledge that conflicts with quantitative data, then the CAP should leverage the kūpuna's knowledge.
- Encouraging the practice of kilo can empower everyone to contribute to the understanding of changing conditions on a localized level, as well as get the community to be more involved in adaptive decision-making.
- Provide a platform for people to contribute their observable changes and build a baseline of localized data
- Examining pre-plantation mo'olelo and place history can provide a better understanding of what was working, what has changed, and why these changes have occurred.
- Work has already been doing in collecting archival resources and place names on Kaua'i. Delve into these resources

Exploring Innovative adaptation strategies

Innovative ideas and technology being utilized elsewhere should be explored and contextualized to help advance the island's resiliency, sustainability, and eliminate fossil fuel usage.

- Explore opportunities to implement managed retreat. The process can also be explored via pilot managed retreat project, which can pave the way for other managed retreat efforts. Also look to past retreat efforts. When Kalihiwai experienced the two tsunami events in the 1940s and 1950s, there were retreat efforts.
- Consider no re-building policies in areas where houses are continuously destroyed by intense storm events.
- Create parks as retreat occurs.
- Other places using innovative strategies to adapt to climate change, such as the Netherlands and Japan, should be explored. For instance, one participant noted that there are shoreline policies in California and progressive recycling systems in Oregon that are worth exploring.
- There is a need to convert to electric vehicles, but people shouldn't rely on the grid. Also need to consider that electric vehicles are limited in going to places and this prevents people from converting to electric vehicles.
- One talk story participant mentioned that because there are large rain events, sewer facilities may be better suited for smaller plants that are more dispersed rather than larger plants.
- Look into innovative ways in which the community can be provided financial support to incentivize sustainability and adaptation efforts, such as transitioning from cesspool systems or expanding farming opportunities.
- Two talk story participants recommended looking at tax breaks to incentivize change and address issues of gentrification.
- A talk story participant suggested a tax credit being provided to those who work and live in the same ahupua'a in efforts to limit the number of cars on the road and to encourage people

to mālama their community.

Improving community education

Further provide education to communities, as well as tourists, about climate change impacts, government jurisdictions and operations, adaptation opportunities, and ways to prevent ecosystem degradation.

- The CAP can help the community better understand jurisdictional management of vital assets and resources.
- Bring awareness about the impact climate change has on Kaua‘i.
- Help community to create connection between their actions and the impact that has on climate change. Tracking processes, such as process with waste can also help the community understand the impact. In line with this, another talk story participant expressed getting people to understand producer responsibility.
- Enhance opportunities to get youth, the local community, and visitors involved in sustainability efforts
- Provide opportunities for climate change education to those whose first language is not English, such as the Marshallese community.
- Learn from the stories of climate change refugees, such as the Marshallese immigrants where climate change is rising as more of a driver for immigration.

EMERGENCY PREPAREDNESS

The themes compiled under this topic area provides an overview of the participant’s attitudes of the County’s strengths and needed improvements in preparing for emergencies, as well as lessons learned from coping with recent disasters.

County strengths in emergency response

Six talk story participants expressed satisfaction with the County’s response to the 2018 flood event.

- The past storm and flood events got the County to be more forward thinking about how land use plays into disaster management. The County also, in the words of one participant, “gained a more critical eye and the ability to think on their feet.”

County improvements in emergency response

Improvements in emergency response include: (1) Increasing communication and collaboration efforts, (2) Expanding disaster preparedness and mitigation efforts, and (3) Supporting community led, government supported efforts.

Increasing communication and collaboration efforts.

Six talk story participants spoke about how siloed communication and action amongst departments as well as with community organizations hinder emergency preparedness efforts.

- Need to clearly define whose jurisdiction is responsible to respond, whose jurisdiction is what, and develop plans to ensure timely response when issues arise. For instance, five talk story participants stressed the need for better coordination between County and State departments of ensuring clean and maintained ‘auwai (ditches), streams and rivers to prevent debris and excess growth being a barrier during big rain events.
- One community group emphasized that it would be helpful to have a structured plan with step-by-step instructions that frames out an emergency response event.
- County can create a “jurisdictional mosaic” to better understand jurisdictions, as well as help the

community understand how they can engage.

- Community members get frustrated when trying to figure out who is the person they need to talk to within government.
- Two participants expressed frustration about not enough official information reaching the community who is most at-risk.
- County should share more educational components for areas that should be preserved (e.g. impacts of driving on sand).

Expanding disaster preparedness and mitigation efforts

Six talk story participants recommended that the County should focus more on disaster preparedness and mitigation.

- One talk story participant suggested establishing and funding for a permanent resiliency planner within the County.
- When development or infrastructure is destroyed, there should be long-term investment of infrastructure that can withstand another event or be relocated in a less vulnerable area. For instance, three talk story participants pointed out the investment put into fixing vulnerable roads like the highway in Wailua rather than exploring an alternative road source.
- Areas that are vulnerable should not be considered for development. Tourism should not dictate these decisions.

Supporting community led, government supported efforts

- Five participants expressed that efforts should be community led, with the government supporting community agency. For instance, government can support community groups in planning and implementation, such as providing finances and equipment to implement efforts.
- Trusted relationships with the county is critical in successfully having community led, government supported efforts
- County should work more directly with community leaders. One talk story participant recommended that government ask community leaders how their community can be more resilient so that the solutions come from the community. These coordination efforts should be done on a regular basis to build a level of coordination before the emergency event occurs again.
- Expand citizen science opportunities and give community access to collected data so that communities can respond to disasters and impacts more appropriately.

Other Comments: County improvements in emergency response

Support community self-sufficiency

Two talk story participants felt that the County should help to empower the community's ability to be self-sufficiency in order to increase community resilience during storm events.

- During Hurricane Iniki the supply chain was interrupted, and the County took two weeks to respond.
- One talk story participant explained that community members can find it difficult or onerous to turn to County for guidance.
- One talk story participant suggested that government can make it easier for households to set up self-sufficient systems, such as rain catchment or solar systems, to encourage community resiliency in times of hardship.

Lessons learned from coping with recent disasters

Talk story participants noted the following lessons that were learned from coping with recent disasters: (1) Need a plan for future alternative access routes and (2) Instigate partnerships with the community.

Need a plan for future alternative access routes

Six participants noted that recent disaster events highlighted how alternative access routes are needed.

- During past heavy rain and storm events, there have been mobility issues in getting supplies in and evacuating people out due to lack of alternative routes in accessing communities.
- Community had discussion with the government regarding future alternatives for access on the North shore, but government did not provide a new alternative for access. Instead, the County bought a boat. Koloa community also had discussions with government about an alternative route for Lawai.

Instigate partnerships with the community

Six participants stressed that the County should seek to develop partnerships with the community.

- Community is the best responder. The community also looks for resources within the community rather than just what government can provide.
- Ke'e Beach Park control and shuttle system is a model of how to work directly with community members. However, one talk story participant felt that the government should have set up and managed the shuttle early on rather than having the community run it.
- Important private players also need to interact with the community.

Other comments: Lessons learned from coping with recent disasters

Safety and mental health considerations

One participant noted that in disaster and climate change response, considerations towards domestic violence, sexual assault, and the long-term emotional effects from climate change need to be taken into consideration.

- Develop a safe and normalized way to routinely ask questions about domestic violence and sexual assault to ensure people's safety in evacuation efforts. Consider how to do so for children too. If needed, also ensure that support can be provided.
- Create a coordinated response for mental health regarding long-term effects of increased stress, anxiety, and trauma from climate change for both adults and kids.

KAUA'I'S FUTURE

The themes compiled under this focus topic area summarize the qualities participants believed should be preserved as the climate changes, as well as ways in which talk story participants envisioned the future for Kaua'i.

Qualities to be preserved as climate changes

Qualities to preserve that were most mentioned by talk story participants include: (1) Healthy ecosystems, (2) Community cohesion and aloha spirit, (3) Native Hawaiian cultural values, practices, and ancestral knowledge, (4) Agricultural practices, and (5) Access to subsistence and cultural resources.

Healthy ecosystems (n=9)

- Coral reefs
- Forests and tree growth
- Sandy beaches
- Fresh water streams
- Wetlands
- Native species, biodiversity

Community's cohesion and aloha spirit (n=6)

- The community sense of 'ohana (family), to care for each other, share with one another, and to kōkua (help).
- Foster the sense of community and social connectedness

Native Hawaiian cultural values, practices, and ancestral knowledge (n=6)

- Culture is an expression of survival
- Kalo production.

Agricultural practices (n=3)

- Protect agriculture lands along rivers, such as constructing levee to mitigate impact from flood waters.
- Agricultural history and character

Access to subsistence and cultural resources (n=3)

- One participant mentioned that conservation efforts, such as marine protected areas, can sometimes create conflicts in access for subsistence.

Other comments: Quaities to be preserved as climate changes

Connection to place and ancestors (n=2)

- Connection and care for iwi kūpuna, who will continue to take care of us on a deeper spiritual level.
- Wahi pana

Transportation access (n=1)

- Also consider cost in transportation

Envisioned future

Talk story participants envisioned the following: (1) Corridor of protected open space along the shoreline, (2) Carbon-neutral Kaua'i, (3) Sustainable tourism and development, (4) Diversified economy, (5) Proactively caring for 'āina.

Diversified economy

Ten talk story participants envisioned Kaua'i diversifying its economy by investing in climate change mitigation as a future industry and expanding sustainable local agriculture.

- Support local farmers and nonprofits that promote food accessibility and sustainability.
- Mālama Kauai, Grove Farm, agriculture on the west side
- Promoting farming as an occupation on Kaua'i to students and engaging youth in future climate change mitigation industry opportunities.

- Kaua'i agriculturists are already paying attention to climate impacts and might be willing to engage in the conversation if messaging is related to direct impacts felt or anticipated by the industry
- Critical to support farmers given that farmers provide the food and resources during disasters

Proactively caring for 'āina

Seven talk story participants emphasized the need to mālama 'āina and look to restoration efforts to address climate change impacts

- Support coral reef conservation efforts, reforestation and replanting efforts, as well as the local cultivation of native crops.
- County should empower organizations doing maintenance, resiliency and sustainability work.
- Promote efforts to build community's relationship with 'āina.
- Allowing areas, such as beach parks, to "rest" to mitigate overuse impacts.

Corridor of protected open space along the shoreline

Six talk story participants envisioned a corridor of protection along the shoreline for the ocean to reclaim and reestablish itself.

- A corridor of coastal protection can provide habitat and solace for native species to rebound, especially those whose habitat grounds in the Northwestern Hawaiian Islands are disappearing.
- Preserve undeveloped coastal spaces to enhance natural adaptation.
- Preserve Mahaulepu.
- Preserve Nīhoku Wildlife Refuge and the lighthouse area (critical in providing bird habitat)
- Wetland by the Monkeypod trees in Koloa should not be built across
- One participant wished that the County would develop TDR program
- County should prohibit any future development in hazardous areas.

Carbon-neutral Kaua'i

Five talk story participants said that Hawai'i should be a leader in becoming carbon-neutral.

- One talk story participant suggested providing a subsidy for electric vehicles, but also cautioned that going fully electric will contribute to more 'opala. In response to this, the participant suggested that government should plan and fund an incubator to create "conversion kits" for functional electric trucks.

Sustainable tourism and development

Three talk story participants envisioned a Kaua'i where tourism and development is done sustainably, in which capacity is also carefully considered.

- One talk story participant wished for a moratorium on travel.

PLANNING PROCESS CONSIDERATIONS

The themes compiled under this focus topic area provide an overview into the participant's perceptions toward the CAP's design and engagement process.

Design of plan and workshops

The CAP should focus the discussion either geographically, such as by moku, or by sector (n=5).

- Climate change adaptation will not be a 'one-size fits all' approach because geomorphology and the impact from climate hazards will differ based on place.
- Five talk stories advocated that the CAP's approach should emphasize place-based adaptation, such as focusing on a moku scale.
- One talk story participant suggested that the CAP first find trends in the data across geographies to strategically consider what adaptation strategies can be applied across the board. Do this process with a diverse community stakeholder group, including kūpuna and community experts. Then, the remaining workshops can look at the unique ways in which places are vulnerable and consider place-appropriate adaptation strategies.
- Tailor engagement by place. One talk story participant suggested the format of Aha Moku community meetings, in which the meetings are place-based and there are more small meetings with a set agenda. Allow each community to look at the same set of questions.

Community Engagement

Talk story participants provided various suggestions in regard to conducting community outreach, effectively engaging the community, framing climate change issues, and promoting learning.

Outreach suggestions:

- Use personal contacts and talk directly to large families. Coconut wireless works.
- Start with engaging grassroots and community leaders within an ahupua'a
 - Reaching out to organizations are key because many community leaders are tapped out and working people are busy.
- Conduct a variety of outreach strategies and be creative.
 - Social media
 - Updates on Kaua'i bus
 - Electronic signage near schools
- Be cautious that emailing is not as effective of an outreach strategy in reaching out to most impacted community members
- Establish and build relationships while conducting outreach (and throughout the whole CAP process)
- Have a diverse group.
 - Up-and coming community leaders
 - Important stakeholders (e.g. large landowners)
 - Grassroot organizations
 - Federal agencies (e.g. Fish and Wildlife)
- Certain community groups with place-based expertise, such as farmers and fisherpeople, tend to be more hesitant to share their thoughts/observations/opinions in larger, public, formal settings.
 - Relationships are important and engage them in a less formal format.
 - Inviting agriculturists to a one-on-one talk story session is more likely to yield engagement with the climate change planning conversations.
 - Need to be aware that there are also factions within Kaua'i agriculture. Usage of GMO and pesticides dividing the farming community.
 - One farmer suggested talking about issues that directly affect farmers, such as water access, greenhouse gas reduction energy policies, or transportation of goods.
- Try to partner up and collaborate with the University of Hawai'i and KCC.

Engagement recommendations:

- Six talk story participants encouraged that the CAP host smaller community stakeholder meetings in

addition to larger public meetings.

- It was recommended that the CAP invite community leaders and place-based experts in each moku to a smaller meeting first to listen and understand place-specific changes.
- One talk story participant explained that all interviews with kūpuna and community leaders/place-based experts can be done at one time. Invite all the kūpuna, bring food and lunch, have stations set up. Do a pule (prayer) and start. This format allows the project team to get a ton of interviews at one time and helps other kūpuna to hear from each other.
- Also conduct island-wide specific practitioner talks (e.g. hunter group, lei maker group). Half the day walk story and half the day in a meeting. Beneficial in focusing on adaptation.
- Bring a big map and let people talk about things and put it on the map.
- Let youth take notes
- One talk story participant said that it is good practice to list the names of every 'ohana that participated. Helps to build trust and willingness to share what they know.
- If controversy comes up, it's important to have people from the community who are "fire-putters."
- In approaching communities about climate change, educate the community on the front end, ask them about pressing issues, and then follow up with asking how the County can support communities.
- Door to door surveys and outreach
 - While one talk story said that surveys don't work well with local families, another talk story group said that mail surveys can be an effective way to engage people who are less familiar with technology or not on social media.
- Walk stories
 - Be in place with people as much as possible so that they can show what they are talking about.
- Utilize maps, visualizations and art to show the impacts of climate change on a localized level and the interrelationship between the built and natural environment.
 - Have large paper maps that people can view in their community and is accessible.
 - Maps over time. People can see changes from plantation time to maps with projections. Looking at these changes will naturally bring out stories.
 - Historical imagery resources (e.g. Hawai'i Coastal Geology Group resources).
 - Two talk story participants recommended the Blue Line Project, initiated by Blue Planet, which shows a blue line around the coastline to show where the water will be in the future.
- Set the table. Having food brings people together.
- The CAP needs to carefully consider and meaningfully engage those who are low-income and houseless, including people living in cars and at the beach.
 - Develop a plan as to how to communicate with houseless living in vulnerable areas, like beach parks.
 - Collaborate with people low-income and houseless already know, such as case managers, KEO, Housing, or State Mental Health. People are more receptive to people that they already know.
- Follow-up periodically with community members and preferably give them plan deliverables in digestible pieces at a time. It is difficult for the community to digest the entire plan at once.
- For the TAG, be conscious as to how to make everyone comfortable with their expertise. Consider personnel roles to ensure people feel welcomed. May also be good to have small group check-in with TAG members.

The necessity of youth engagement (n=12):

- Children are "fresh researchers" and are great with coming up with creative solutions.
- Some children are already involved in practicing kilo
- Promote intergenerational learning by having the parents/grandparents also become involved and interact with the kids. Older students can interact with younger students.
- Ask kids, "what changes have you seen?", "what do these changes mean to you?", and "how should we address these changes?"
- Personalize it. Cases studies relative to their place is best. Connect climate change to things kids are interested in (e.g. surfing).
 - For young students, just want to make plant seeds and make connections.
 - Reconnect to sense of place. 'Aina-based learning activities. Get keiki to know the significance of places, place names, and why places are named that. Bringing student to a place and having maps to talk about the connections is a great way to engage them.

- Create interactive activities that promote kids to move and walk. Field trips/virtual field trips. Give them a chance to huli ka lima lalo (turn our hands back to the ground).
- Engagement with students should not only be educational but should also result in a product or outcome. Project oriented- kids create and County utilize.
 - Ask students to create informational brochures that County can use. Another idea was to ask students to write a letter to the County.
- During the pandemic, breakout groups are helpful in allowing students voices to be heard.

Framing and communicating climate change:

- Personalize climate change communication to help people understand how climate change is important to them.
- In framing the issue of climate change, be conscious about not making the community get stuck feeling “useless” or like a “victim.” Build social resiliency by having a narrative that reminds people that we have adapted to change in the past and we can continue to adapt.

Reciprocal sharing of information and perspectives :

- Public meetings typically allow the community to provide input but have not trained the community to engage in consideration of the decision making and implementation process. This creates frustration amongst community members when their concerns and ideas are ‘dismissed’
- Building relationships are key to creating a space for sharing and listening
- Provide resource and information to schools/educators to promote reciprocity in sharing information and collaborating. Providing place-based resources for educators (sites, maps, data, contacts) are helpful
- Public meetings should be a two-way flow of information, with input provided by the community; and factual information provided by staff to the community. It should be more than a listening session.

Collaboration opportunities

- The Kaua'i Community Science Center is getting involved in a Constructive Visions project that is run by the National Geographic Explorers. Constructive Visions aims to create 10 stories for a more sustainable post-pandemic future. The Community Science Center wants to collaborate with the CAP project team.
- KCC Sustainability Committee is interested in collaborating on the youth summit.
- The students involved in the Ko'olau Limu Project can present to the project team and engage in the youth engagement activities.
- Kilauea Neighborhood Association does a good job of reaching out to the community and can help distribute surveys to the community if we need assistance.
- Namahana Public Charter School can help connect us to other people.
- Kanuikapono willing to engage students on climate projects.

Other people the team should talk to

- Community leaders from each moku, large Property owners (e.g. Robinsons, Grove Farm, Kamehameha Schools), business groups, realtor groups, coastal property owners, General Managers of condo/hotel properties, recreational users (e.g. canoe paddlers, surfers), kūpuna, cultural practitioners, ranching community
- Focused groups with fisherpeople
- Kalo farmers
 - Chris Kobayashi
 - Rodney Haraguchi
- People who work closely with youth (e.g. Waipa Foundation or KUPU interns)
- Adam Killerman: irrigation specialist for Grove Farm
- Mike Faye: Kekaha Agriculture Association
- Mehana Vaughan: UH Mānoa NREM professor and Kilauea resident (n=3)
 - Reached out to Mehana for a talk story
- Limahuli (n=6)

- Lei Wan: Director of the Limahuli Garden and Preserve
- Hawaiian Homelands
 - Reached out to DHHL for interview
- Hawaiian Civic Clubs
- Tesla Rental Car Business
- Daniel Erickson, Co-owner of Mission Zero Hawai'i and instructor at KCC
- Risa Chiles, Microbiologist and former teacher at Island School (?)
- Malia Nobrega-Olivera: Technical Advisory Group (TAG) member (n=3)
 - Technical Advisory Group (TAG) member
- Mikaela Way: United Nations representative who focuses indigenous cultures, women and youth
- Sari Pastore: Citizen forester
- Pelika Andrade
- Dr. Rosie Alegado: UH Mānoa Oceanography professor
- Surfrider (n=4)
 - Barbra Wieder
- Hanalei to Hā'ena Community Association
- Princeville Community Association
- North Shore Rotary
- Lena Ola
- Contact the other Hawaiian societies
 - 'Ahahui Ka'ahumanu (Aunty Julie)
 - Aunty Carol Lovell
- Charter Schools
 - Kawaikini
 - Kanuikupono
- Mālama Huleia
 - Peleke Flores part of Technical Advisory Group (n=2)
 - Tiele Lauren
- Waipa foundation (n=4)
 - Stacy Sproat
 - Ka'ui Fu
- Jasmin (Tita) Kuhaulua: works with KUPU interns
- Kanani Durant
- Aloha 'Āina Poi Factory
 - Kaina Makua
- Nāpua Noeau
- Nalani Kekaulua-Lei (n=3)
 - Reached out to Nalani
- Kaua Mata: West side resident
- Nicole Codi
- Nicolai Barca: Hunter, fisherman, The Nature Conservancy Conservationist
- Kaua'i Food Hub
 - Paulina Barsotti
 - Megan Fox
- Zerio Waste Kaua'i
 - Jimmy Trujillo
 - Jesse Brown-Clay
 - Ruta Jordans
 - JoAnn Yukimura
- Hui o Laka
- State officials
 - DAR officers: Erin Swenk (n=2)
- Makaala Kaaumoana: Hanalei Watershed Hui
- Hydrologists
 - Matt Rossner working with Waipa
- KISS: Ohia Rust (?)

- Malia Chun
- Pua KCC class
 - Reached out to Pua
- Hanapēpē salt ponds families (n=2)
- Ku Lee (?)
- Malia Orgrado (?)
- Mālama Nā ‘Apapa: Coral Reef Conservation
- Hui Maka‘āinana o Makana
 - Reached out to Hui Maka‘āinana o Makana
- Hale Halawai (Hanalei’s Cultural Community Center)
- Hanalei Canoe Club
- Princeville Kaua‘i North Shore Foundation
- Uncle Jack Gushiken: Manages irrigation
- Oceana Francis: First Hawaiian oceanographer atmospheric scientist
- Katy Hintzen (?)
- Taro Owens: Maui Sea Grant Extension Agent
- Kīlauea School
- Hanalei School: Hanalei middle school is building floating homes (n=2)
 - Jonathan: 6th grade teacher
 - Annie Torio
- Uncle Bruce (?)
- Brad Romine
 - Technical Advisory Group member
- Kilauea Neighborhood Board
 - Reached out to Kilauea Neighborhood Board
- ‘Āina Ho‘okupu o Kīlauea
 - Reached out to ‘Āina Ho‘okupu o Kīlauea
- Sust‘āinable Moloka‘i: Sea Level Rise and Climate Change Resiliency and Adapation Plan
 - Reached out to Sust‘āinable Moloka‘i:
- Moriama (?)
- Sarah Boyd (?)
- Kaua‘i Coffee
- Grove Farm
- Jon Lucas: DOE
- Osias Page: Youth

Appendix A: Talk Story Guide

Length of Time: 30-45 min

Introductions

- Introductions of everyone on the call
- Provide a brief overview of the CAP, the purpose of the CAP, and the talk stories
- Provide a description of what climate change is.
- Ask if they have any questions for us.

Questions

1. Have you noticed any changes in your community and/or the work that you do over time that you feel is related to climate change? If so can you tell me more about these changes?
 - a. Are there any particular places or facilities that you feel are particularly vulnerable to climate change and why?
2. In your opinion, how does climate change affect Kaua'i?
 - a. In general, what climate impacts do you think are most significant for Kaua'i as a whole and in relation to your specific area of work?
3. What qualities or attributes of Kaua'i do you feel need to be preserved as the climate changes?
4. Thinking of recent disasters like the 2018 flooding, can you share any lessons learned from coping with or responding to these events?
 - a. With this in mind, how do you perceive the County's response to disasters as well as to chronic climate change hazards, such as sea level rise?
 - b. How can the County improve its response and preparedness to disasters and to chronic climate change impacts?
5. What would you say are key issues and opportunities that Kaua'i faces in adapting to climate change?
6. How do you suggest we engage the people most impacted by climate change during the CAP process, especially those who may not participate in typical engagement channels?
7. Would you like to be more involved in the CAP planning process?
8. Can you suggest any other people the team should reach out to?

Appendix B: CAP Project Information Sheet

Kaua'i Climate Adaptation Plan (CAP)

Why should I be concerned about climate change?

Climate change is already affecting our Kaua'i communities and ecosystems and will continue to do so for generations to come. Sea level rise, coastal erosion, extreme heat, and other impacts threaten our neighborhoods, parks, roads, and quality of life.

Why is the County developing a climate adaptation plan?

The County's General Plan states we must act now to prepare for climate change. Therefore, the County is developing a Climate Adaptation Plan using a community process and the best available science. The goal of the plan is to determine strategies and priorities to reduce our vulnerability to climate change, while also considering emissions reduction targets.

Why was I asked to participate in a talk story session?

As part of the pre-planning phase, we are conducting talk story sessions to hear your ideas on how the County can effectively engage the community in the Climate Adaptation Plan. Your feedback will guide the planning process moving forward.

Where can I get more information?

Visit www.kauaiadaptation.com or follow us on social media: IG @plankauai, FB @Kauai County Planning Department. If you have questions, please email plankauai@kauai.gov or call (808) 241-4050.

Who is managing the project?

Consultants:

- Raimi + Associates

County of Kaua'i:

- Planning Department
- Office of Mayor
- Kauai Emergency Management Agency
- Office of Economic Development
- UH Sea Grant College Program

Appendix C: Talk Story Email Template

Aloha [name],

My name is [name] and I am [affiliation]. The County of Kaua'i is starting it's island wide Climate Adaptation Plan. The goal of the plan is to determine strategies and priorities to reduce our vulnerability to climate change, while also considering emissions reduction strategies.

As part of the pre-planning phase, we are conducting talk story sessions to hear your ideas on how the County can effectively engage the community in the Climate Adaptation Plan. Your feedback will guide the planning process moving forward. I am reaching out to ask if you/someone from your organization are/is willing to participate in a 30 minute talk story session?

If you are willing to participate, please respond to this email so that we can coordinate a date and time that works for you. We can talk story either over video-conference, by phone, or, if preferred and if deemed safe, in-person. We'll also have another County staff member present to take notes.

Mahalo for your consideration, time, and support! To learn more about the CAP process, I attached a project description to this email. Please don't hesitate to reach out if you have any questions.

Mahalo piha,

[name]