Pacific Islands Fisheries Science Center

Cultural Fishing in American Samoa

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INTRODUCTION

Local small boat (alia) and larger monohull longline fisheries have operated in American Samoa since the 1990s. In the early 2000s, at the height of alia longline landings and participation by alia and monohull vessels, there was concern about gear conflicts and catch competition between these two fleets. In response, in 2002 the Western Pacific Regional Fishery Management Council (Council) developed, and the National Marine Fisheries Service (NMFS) approved, a fishery management plan amendment and regulations establishing a Large Vessel Prohibited Area (LVPA) which extends seaward 30–50 nm around the various islands around American Samoa and restricts monohull longline vessels >50 ft. in length from fishing for pelagic management unit species within the LVPA (NMFSNOAA 2002). Since 2002, the alia fleet participating in longline fishing methods has declined to only one or two vessels. Decreasing catch rates, increases in fuel prices, lack of capacity to store and freeze catch, as well as lack of capital to maintain and repair their vessels led many alia fishers to switch to bottomfishing and trolling, which occur today. Others exited the fishery all together. The longline fleet of monohull vessels has also experienced declining catch rates and fish prices, and increasing fuel and operating costs (Pan 2017). In addition, only one tuna cannery is still in operation in Pago Pago Harbor. To address changing fishery conditions, the Council recommended in 2015 an exemption to the LVPA rule that allowed large (>50 ft) U.S. vessels holding a Federal American Samoa longline limited entry permit to fish in certain portions of the LVPA. NMFS approved this amendment and implemented the LVPA exemption in January 2016 (NMFS 2016).

The American Samoa government sued NMFS claiming that NMFS did not consider obligations under the 1900 and 1904 Deeds of Cession under which the chiefs of American Samoa transferred some authorities to the United States, as “other applicable law” under the Magnuson-Stevens Act (MSA). In March 2017, the U.S. District Court ruled in favor of American Samoa, holding that regulations developed under the MSA must preserve and protect American Samoan cultural fishing practices (*Territory of American Samoa v. NMFS, et al.*, 16 cv 95, D. HI, 2017). Future action on the LVPA will need to demonstrate how cultural fishing is being preserved and protected, necessitating the development of a tool to assess dimensions of cultural fishing.

Pacific Island Fisheries Science Center (PIFSC) social scientists have over a decade of experience conducting field research in American Samoa (Levine and Allen 2009; Grace-McCaskey 2015). To examine the multifaceted aspects of cultural fishing in American Samoa, PIFSC social scientists developed a conceptual framework through an iterative and collaborative process. It was presented at the 171st Council meeting held in Pago Pago in October 2017 and the Council recommended that PIFSC social scientists conduct a study of cultural fishing to present at the next Council meeting in March 2018. While this timeframe did not allow for a full examination of the question or comprehensive fieldwork, this report provides an overview of pelagic fishing contributions to cultural practices in American Samoa as might relate to LVPA decisions.

History of Fishing in American Samoa

The Samoan Islands were settled by Polynesian voyagers as early as 1000 BC, and marine resources have continuously played an important cultural, economic, and subsistence role in village life (see Severance and Franco 1989; Levine and Allen 2009; Armstrong, Herdrich, and Levine 2011, and Severance et al. 2013 for review and details on fishing in American Samoa culture). Colonial contact began in 1722, and commercial catch from foreign vessels have been brought to American Samoa since the 1950s when the first cannery was built on Tutuila. Local participation in commercial fishing did not begin until the early 1970s when development projects began to modernize local fishing methods (Levine and Allen 2009). Since the 1970s, commercial fisheries have evolved, first using wooden dories, then aluminum constructed alias purchased from western Samoa in the early 1990s, and finally in the late 1990s larger, monohull longline boats began to be purchased from Hawaiʻi, and used by local fishing families. While modern materials and commercial catch are relatively new compared to the long history of non-commercial fisheries, they have for the most part supplanted the canoe fisheries[1] for reaching pelagic waters.

Culture and Fisheries

The word "culture" has multiple meanings in different contexts (Williams 2014). However, when examining the culture of fishing, it inescapably describes an interaction between a social and ecological environment over time. This interaction is highlighted in the UNESCO definition of "intangible cultural heritage" which includes the explanation that it is "...constantly recreated by communities and groups in response to their environment, their interaction with nature and their history..." (UNESCO 2003, p. 2). The development of cultural fisheries is therefore an interplay between a place (a specific ecosystem) and a history of people (a social system over time). This also highlights the fact that culture is not a phenomenon that can be fixed to any one point in time. It is a living and adapting creation of human communities (Baldauf 1981).

Culture is often divided into two categories: (1) material (what humans make) and (2) intangible (how humans organize). *Intangible* culture would also include the shared norms and values that create expectations and govern human behavior. These norms are often seen as a basis of cultural connection and understanding, such as *Faʻa Samoa*, or "the Samoan way" (Baldauf 1981). In fisheries, *material* culture could include the gear and infrastructure used in fisheries and the fisheries value chain[2], while *intangible* culture would include fishing practices, rules, and knowledge. This study builds upon the initial conceptual framework of cultural fishing, examining material and intangible aspects of fishing for the American Samoa alia and monohull longline fleets.

[1] Shore-based fisheries practices still occur, but we focus on the canoe fisheries because these could potentially share the same spatial area as the modern alia and monohull longline vessels.
[2] A fisheries value chain includes the act of fishing, but also pre- and post-fishing activities.

MATERIALS AND METHODS

Literature Review of Cultural Fishing

We first searched the worldwide peer reviewed literature for the language used to describe or categorize fishing. We performed a topic search in Web of Science (accessed 27 November 2017) for all articles with the exact phrase "cultural fishing" as well as other phrases that are typically used to discuss various aspects of what could be considered cultural fishing: artisanal fishing, historical fishing, indigenous fishing, non-commercial fishing, small-scale fisheries, subsistence fisheries, and traditional fishing. For comparison, we also searched for commercial and recreational fishing. We assessed frequency of the phrases, and identified key literature examining the definitions and meanings associated with them.

Developing the Cultural Fishing Conceptual Framework

We began by examining categories that were important in definitions of cultural fishing in other contexts (NSW Government, 2015), which not only focused on the identity of the person fishing, but also on the materials used, and how the catch was distributed. We then considered these categories in terms of the five Ws (who, what, where, when, and why), and we also included "how." The five Ws have been used as a frame work for other concepts such as compliance (Arias 2015). This analysis was the basis of the work presented at the 171st Council meeting. While this approach was helpful in synthesizing categories that can be counted and observed, such as materials and methods used to fish, and certain motivations for fishing, such as economic gain, social gain, personal satisfaction, and subsistence, it did not fully capture considerations specific to culture, especially some of the more intangible elements related to heritage.

To address this concern, we turned to the UNESCO definition of intangible cultural heritage:

"... the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity," (UNESCO, 2003, page 2).

Using this definition as a guide, we re-examined the categories that has been presented at the 171st Council meeting in terms of criteria that could be used to assess aspects of fishing for their relevance to cultural heritage. We included subcategories, recognizing that fisheries are made up of several interacting biological and social factors (Table 1).

In the process of developing categories, we also recognized that cultural aspects occurred on a continuum, from traditional or narrow definitions of culture (often more aligned with localized or customary/indigenous practices) to contemporary or broader definitions of culture (Figure 1). This conceptualization locates core aspects of culture at the center but acknowledges that culture evolves based on changing social and ecological conditions. Thus, rather than defining "cultural fishing," the resulting conceptual framework allows for the examination of an activity or action for the aspects of cultural fishing that it preserves or protects.

Figure 1. Conceptual framework to examine cultural fishing in American Samoa.

Table 1. Factors of the cultural fishing conceptual framework.

Factor	Sub-factors	Considerations include:
Motivation	Commercial vs. Non-commercial	Proportion of non-commercial catch, as well as other non-commercial purposes such as ecological knowledge, or cultural practice.
Human Identity		The identity of the person involved in the fisheries including owner, captain, or crew.
Fishing Materials	Vessels	Materials used to make the vessels, where the vessels were made, and how long that vessel type has been in use in American Samoa.
	Gear	Materials used to make the gear, and how long that gear type has been in use in American Samoa.
	Infrastructure	Infrastructure or processing methods involved in the fishing value chain (both non-commercial and commercial).
	Capital Investment	Amount of capital investment needed for the fisheries.
Fishing Practice	Species	Cultural importance of certain species.
	Fishing Grounds	Cultural importance of certain fishing areas.
	Fishing Seasons	Cultural importance of fishing during certain seasons.
	Efficiency	Gear efficiency.
	Fishing Value Chain	Length of the value chain, and they type of value (cultural or commercial) being added to the catch at various stages.
Governance		The institutions and process of decision-making.

Applying the Cultural Fishing Framework

The conceptual framework was used to develop themes for coding primary documents such as the transcripts from the public comments during the 171st Council meeting. This process involves a close reading of the texts for key ideas that are repeated. Coding was done using Nvivo software, which can group text by themes for closer examination. The framework categories also were used to develop a list of potential questions and prompts that could be used during fieldwork for interviews of women and men participating in the local fisheries.

Fieldwork Preparation

In advance of our visit to American Samoa, we coordinated with the local NOAA PIFSC coordinator located in Pago Pago. To develop culturally appropriate methods and organize logistics, we also spoke with people knowledgeable about work and culture in American Samoa. One recommendation was that we complete a letter of introduction regarding our proposed work for the Office of Samoan Affairs (OSA). This was delivered by the NOAA PIFSC coordinator in late January 2018 to OSA representatives. We also created a one-page introduction to our research, which was translated into Samoan.

During the initial logistics discussions, we asked people to suggest key contacts who could provide insight and access to our target audience. Given our time limitations, we focused on people who participate or have participated in the newer alia, longline, or recreational fisheries. The list of key contacts we developed included local government representatives and representatives of local fishing associations. These included the Office of Samoan Affairs, Department of Marine and Wildlife Resources, the American Samoa Alia Fishing Association, and the Tautai-O-Samoa Fishing Association. Representatives from these institutions provided contact information for women and men who were part of their associations or had experience and insights into practices associated with these newer fisheries. The Pago Pago Game Fishing Association was also approached, but their representative was unavailable. However, we did speak to people who participated in recreational fishing tournaments. We also reached out to the Governor's Fisheries Task Force, but were unable to set up a meeting with a representative in the time available.

Oral Histories of the Local Alia and Longline Fisheries

We expanded previous oral history research conducted by PIFSC with American Samoan elders, which asked people about their personal history with fishing (Levine and Sauafea-Le'au 2013). This oral history approach has been used in other NMFS social science projects and allows exploration of the meaning of activities to those involved. The approach was explained to and approved by the people we spoke to regarding field work in American Samoa.

We conducted interviews with individuals representing alia, longline, and recreational fisheries (past and present), as well as one elder with experience working for the local cannery. From February 6–8, 2018, we conducted in-person interviews on Tutuila with 13 people. We had plans to continue these interviews on February 9 and had meetings set up the following week with the Office of Samoan Affairs and other organizations to focus on other elements of the discussion, especially the views of government and cultural experts, as well as people receiving the fish provided by the newer fisheries. However, due to tropical cyclone Gita, which hit on February 9,

we were directed to return to Hawai‘i where we conducted one more interview with our core target audience by phone. While we reached out to other contacts, the aftermath of the storm caused many people to redirect their priorities.

Following oral history methods (Ritchie 2003), the interviews were led by the interviewee. We developed a question guide that we referred to as needed to prompt or follow-up on discussion points concerning the factors identified in the cultural fishing model. Interviewees discussed their personal fishing history, the materials and methods they use, and how these are connected to *Fa‘a Samoa*. We asked them to elaborate on different aspects of culture that intersect with their fishing such as their identity, their motivation for fishing, and changes to fishing and culture in American Samoa. Finally, we explored their view of the future of fisheries and the ramifications of that future. As is standard social science practice, we assured confidentiality—that we would report all findings in aggregate and not identify individuals.

All interviews were conducted by two social science researchers, Danika Kleiber and Kirsten Leong. Both researchers asked questions and took notes during the interviews. Interviews were recorded but the recordings were not transcribed, due to time limitations. Informed consent was received. At the end of each day, interview notes were typed up, and cross-checked by each of the researchers. Portions of the recorded interviews were reviewed to assure accuracy, and for direct quotes. The researchers also regularly discussed the interviews and kept a journal of observations and insights from their overall experiences.

Analysis

We examined the testimony from the public meeting in October 2017 and the notes from interviews and journals conducted in February 2018 for discussion of elements related to the cultural fishing model. We used an inductive, grounded theory approach (Corbin and Strauss 1990) to identify common themes that emerged from these three sources. This included identifying and naming common ideas that came up in the testimony, the interviews, and through our observations. These common themes are presented in the Testimony and Interviews section. While our fieldwork was cut short, we had already begun to hear similar narratives that crystallized around central ideas. With the additional analysis of public scoping comments and other conversations, we are confident that we reached saturation for our limited project scope. We sought feedback on our initial draft from our respondents and key contacts, as well as from members of the Council and the Council’s Scientific and Statistical Committee.

Study Limitations

Due to time constraints, this study very much focused on the perspectives of alia fishers and longline owners. Other groups that would be important to include in future research include longline captains and crew, as well as community members who receive or buy fish from these two fisheries. In particular, reaching out to sitting chiefs, as well as pastors and leaders of other community groups would be important for getting a more comprehensive view of the role of these fisheries in the broader society. This study was also limited to interviews from Tutuila (although there is one fisher from Manu‘a represented in the public meeting comments). Future work on fisheries in contemporary Samoan culture should include perspectives from the other island populations of American Samoa including Manu‘a, Olosega, and Tau, as well as comparisons to Independent Samoa.

FINDINGS

Academic Use of the Phrase “Cultural Fishing”

No articles cataloged in web of science included the phrase “cultural fishing” (Figure 2), further supporting a need for a tool to discuss this topic. While “recreational” and “commercial” were the two most common fisheries categories used, “small-scale” and “artisanal” were the most common ways to describe other forms of fishing.

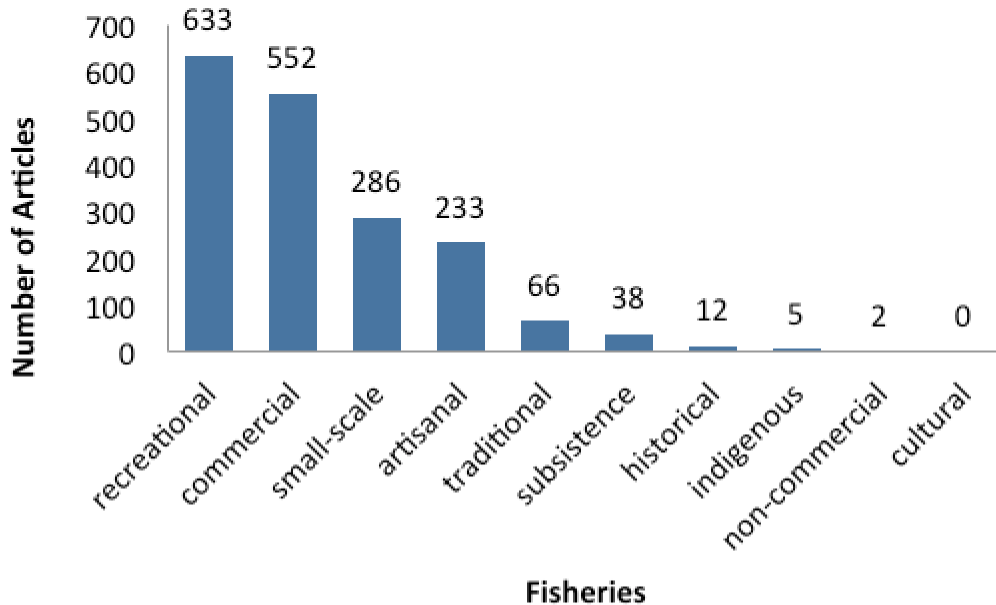

Figure 2. The number of fisheries papers that used each category, from 1965-2017. N = 1827.

Testimony and Interviews

In the following section, we report the perceptions shared by the alia and longline fishers we interviewed, as well as those shared in the public comments during the 171st Council meeting and in our related discussions. These are personal perceptions, observations, emotions and opinions of the respondents, and they are presented as such. Our goal was to present the different perceptions as faithfully as possible, not to judge their merit or veracity.

We will follow the overall categories presented in Figure 1 and Table 1. We will begin in the center with the meaning of *Fa‘a Samoa* as it relates to fishing practices, and then continue on to the outer circles beginning with motivations. We will only present on subcategories (outlined in Table 1), that were expressed in the interviews, hence there will be gaps between all the possibilities presented in Table 1, and what was important to the respondents.

Fishing and Fa‘a Samoa

A shared cultural ideal

The term cultural fishing for many first evoked images of traditional fisheries; that is, fishing methods that use natural materials for lines, hooks, nets, spears, or vessels (i.e., canoes). This fishing is also associated with cooperative efforts of families and communities and the shared benefit of the fishing catch. Providing fish to fulfill community obligations is seen as a core function of fishing and includes giving to the *matai* (village chiefs), *faife‘au* (pastors), and extended family. It is also closely associated with particular species, such as atule (bigeye scad), or palolo (a polychaete worm), where ecological knowledge of seasonality is held by local fisheries experts. This can be considered an idealized view of the historic roots of fisheries practices in American Samoa. Description of the idealized traditional fishing was usually followed by a statement that people no longer use those types of materials, especially canoes (in pelagic context), but that other aspects of fishing traditions still occur.

Both the alia and monohull longline fisheries participants described how their fishing supports the culture of American Samoa (also known as *Fa‘a Samoa*). We identified three core themes that were common to both fisheries, although the way they were expressed in practice sometimes differed between the two fisheries. In addition, beliefs by participants in one fishery about participants in the other did not always align—i.e., the way alia fishers typically described actions of monohull longline fishers differed from the way monohull longline fishers described themselves, and vice versa.

Sharing the catch

Sharing the catch was a dominant theme of *Fa‘a Samoa* that people would describe when discussing their fishing. This was sometimes described generally as helping others but could also include more formalized methods of sharing catch for *fa‘alavelave* (weddings, funerals, or other significant community events), which required distributing fish in a particular hierarchical order. One interviewee explained that in traditional fishing every fish caught was for family. Fishers would first give a portion of their catch to the *matai*, then to the *faife‘au*, and what was left would be shared with your extended family and neighbors.

Other modern examples of giving catch were specific to the recreational fishing tournaments where all catch is given to the Hope House (a local house for the elderly). Even though this was not done through the traditional village structure and sometimes not by indigenous American Samoans, the core function of caring for the local community was consistently viewed as participating in cultural practices. As one interviewee stated, “It may not be *fa‘alavelave*, but it is still community oriented.” Longline owners emphasized the sharing of catch through their crew, but also directly to their own communities.

Beyond the physical exchange of fish, the intent behind sharing was consistently emphasized. As one interviewee stated, “*Fa‘a Samoa* is about the spirit of sharing what you have.” Others described this spirit of sharing as having “a Samoan heart.”

Helping and cooperation

Descriptions of traditional fishing often include methods that require many people, such as the community capture of atule with fish weirs made of coconut fronds (a practice still done in Manu'a). Some people also discussed cooperative canoe fishing for larger species such as sharks.

Alia fishers also mentioned instances of cooperation, such as showing other alia fishers where to find fish, or communally surrounding skipjack. Some longline owners mentioned helping alia vessels when needed (although they did not specify how), providing materials when asked, and not fishing in specific areas during recreational tournaments. There was also a suggestion that the longline owners have increased collaboration with each other as fishing became more difficult and LVPA options began to be explored.

Cooperation among fishers has also been formalized by several different groups, such as the American Samoa Alia Fishing Association, the Tautai-O-Samoa Fishing Association, the Pago Pago Game Fishing Association, as well as a group for military veteran fishers.

Not wasting fish

Many alia fishers emphasized that they do not waste (or throw back) fish that they catch. As one fisher stated: "If we waste then we are wasting the blessing from the Lord." This is coupled by a perception that waste will be followed by bad luck. However, alia fishers shared that longline fishers regularly throw overboard non-target species of fish to save freezer space for the more economically important species. Longline owners on the other hand, described large amounts of non-target species that were brought back and given away. In an unsolicited observation, one longline owner specifically stated, "we don't throw anything away...people think we only go for the albacore and toss everything else. We don't. Fishing is not where we can afford to do that."

What can change, what cannot change

Throughout the interviews, the intangible aspects of culture, such as the spirit of sharing, were emphasized as being the core of *Fa'a Samoa*. Materials used in fishing and even the types of fish caught were not seen to be as important as markers of culture. As the society, and by extension, the fisheries in American Samoa have been shifting with the influence of a market economy, there are still core concepts that remain: family, faith, respect, sharing, and community. The importance of values over materials was emphasized by one interviewee who explained that the focus should not be on defining what is and is not cultural fishing, but rather at looking at how fishing supports culture and cultural needs.

While the shift in materials used is seen as secondary to shared values of *Fa'a Samoa*, some people did describe a sense of loss with the end of canoe fishing, which required family and often community cooperation. In the public comments, one participant stated: "I still want the kids to know the traditional method, but also know and know how to use the modern technology," exemplifying the tension that comes with adaptation to new methods.

Motivation for Fishing

Preliminary discussion in American Samoa made it clear that the motivation for fishing was the most important factor in understanding cultural fishing. Fisheries management generally discusses two broad categories of motivation: non-commercial and commercial.

Non-commercial motivations

Many non-commercial uses were described. Sharing catch with a focus on providing food to both family and community was one of the strongest drivers. This combines subsistence fishing with other cultural practices, such as customary exchange (Severance 2010), and support of local governing systems (including the chiefs and the church). It can also bestow a sense of prestige upon the fishers. Alia fishers in particular mentioned the simple love of fishing and the desire to learn and reinforce local ecological knowledge. Monohull owners discussed the importance of feeding crew and families, providing for their needs and the needs of their community, as well as for more formalized customs such as fa‘alavelave. In these ways, they are contributing to the customary exchange and delayed reciprocity.

It is important to note that regardless of the amount of fish shared, the alia fishers describe giving away their best fish, while the monohull longliners discussed giving away their “miscellaneous fish” (i.e., non-target species that are not offloaded at the cannery). In some cases, this was characterized by those not involved in the fishery as giving away the leftovers, and was seen as having a different cultural value. We heard a similar analogy from one interviewee as to why alias were perceived as less cultural than fishing from canoes “...you come in a canoe, there is no gas, it’s out of love...whatever they got, they always said it was a gift from God and they needed to share that gift.”

Commercial motivations

Both alias and monohull longline fishers had costs related to fishing, and both discussed the need to cover these costs through the commercial sale of their catch. Fuel is one of the major costs of a fishing trip; interviewees reported that fuel cost for a single alia trip can be between $200–400, and a monohull longline fishing trip can cost tens of thousands of dollars for fuel alone. However, there are nuanced differences in how these trips are financed. Alia fishers sometimes receive money from friends and family for the cost of fuel before the trip and will give fish from the trip in exchange. One alia fisher mentioned that if he owed more money to people he would have to stay out longer to make sure he had enough fish to distribute. Even though money is part of the transaction, this exchange is still characterized as “giving” fish to family, friends, and the community.

Monohull longliners sell the bulk of their catch to the cannery. Some also sell part of the non-target catch to local restaurants, schools, hospitals, and markets. Alias that either use longlines or troll can catch species to sell to the cannery, although they typically do not have the ability to amass enough catch to sell all at once (we were told there is a minimum volume required by the cannery). In addition, alias do not have freezers to store their catch if the cannery is at capacity. While the monohull longliners do have freezer capacity to store their catch, we were told that their catch can also be sidelined when a large foreign purse seiner or longliner comes into port to sell their catch to the cannery.

Shifting obligations in an emerging market economy

There is a sense that *Fa'a Samoa* has been changing due to a rapidly expanding market economy. Hence, it is not only fishing that is experiencing the tension between the core tenets of *Fa'a Samoa* and how they are expressed in the context of a modernizing society. This was explained to us in the context of an overall increase in the resources and utilities that require cash. These resources could include things such as school fees and electric and water bills. We have visualized this shift over time in Figure 3A.

One interviewee explained that the shifting economy has also affected catch distribution of alia fishers over time. As he described, before commercial fishing was established in American Samoa in the 1970s, all fish was distributed according to local custom. With the introduction of a development project that built wooden dories in American Samoa, commercial fishing commenced (Levine and Allen 2009). In the beginning, fishers sold about 25% of their catch, and these earnings were largely used to purchase gifts for the family. In the 1980s, aluminum alias were bought from Western Samoa, and the proportion of catch sold increased to around 50%. Today, closer to 70% of alia catch is sold (although it is important to note that there may be variations among individual alia fishers). To some degree, the changes in sale of the catch reflected changing needs to recoup the increased operating expenses that came with advances in technology. As one interviewee described, "...you just catch what you need to eat, it's not for profit, it's just for the community, and for the people, for the family, to sustain. But if [you catch more, then you] sell, get some money to buy some material or something, whatever [you] need to use to catch fish."

These shifts towards a market economy also help illustrate how different fisheries are viewed in terms of their balance of *Fa'a Samoa* and economic obligations. As the monetary capital required to finance a specific fishery increases, so too does the economic obligation. Traditional fisheries require little to no economic capital, and so their obligations can be entirely given to *Fa'a Samoa*. On the other end of the spectrum, non-local "big boats" (purse seiners and foreign longliners) operate almost entirely in a market economy, although there is still a possibility that some of the catch is given away locally. This leaves the local alia and monohull longline fleets somewhere in the middle (Figure 3B).

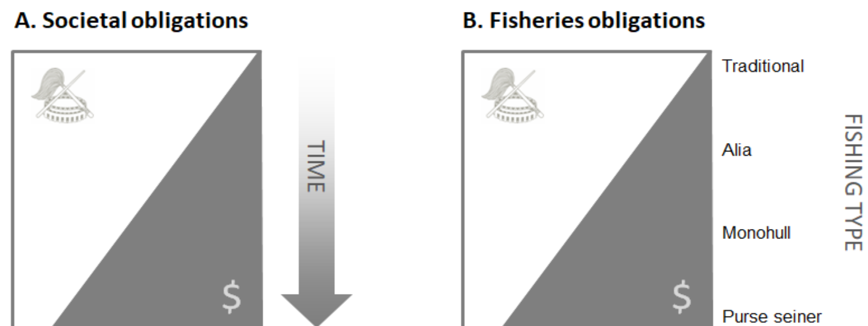

Figure 3. Changing obligations under an expanding market economy and different fishing methods. The white area represents *Fa'a Samoa* and is symbolized by the *tanoa*, *fue*, and *to'oto'o* from the seal of American Samoa. The grey section represents the market economy and is symbolized by the dollar sign.

The move towards a market economy has also shifted the language surrounding the social benefits of fishing. The benefits of traditional fishing are strongly tied to distribution of fish, which can support local governing systems as well as provide food security and delayed reciprocation. These themes are still associated with alia fisheries. As one alia fisher explained, he will happily give a fish to someone in need, partly because he knows that when the roles are reversed the person would help him. Another person commented, “The bottom-line is that the indigenous cultural fishing [in this context meaning alia fishing] is not just looking for big profit, but food security for the community.”

The monohull longliners also discussed giving away their catch for cultural obligations or giving away fish when asked. They also described assisting other fishers with materials and support when asked. But there was also a strong theme in the longline interviews and public comments, of the economic and social benefits from their fisheries. Because they are a local business, they contribute to the local economy through the provisions they buy for their fishing trips and the incomes they generate. They feel that it is unfair to characterize their fishing as non-traditional when alias barter and sell their catch along the roadside, which they view as commercial. Overall, society has shifted to more of a market economy, to which the monohull longliners feel they make important contributions.

Identity

The issue of identity came up many times in the interviews and public comments. People often began by describing themselves as American Samoan or having been born and raised in American Samoa. One interviewee repeatedly identified alia fishers as “indigenous” American Samoan. However, not all fishers or those participating in the alia and monohull longline fisheries are indigenous American Samoan or American Samoan residents.

Among the alia fishers, many of the captains and crew are not indigenous American Samoans, although many of the crew are from Western Samoa. This is also true of the monohull longline fleet, although the public perception seems to be focused on the owners, not the crew. The alia fishers often characterized longline owners as non-American Samoan, or the financing of the vessels as not coming from an American Samoan. In response, the owners of the monohull longliners defended their identity, again often emphasizing that they were indigenous American Samoan or born and raised in American Samoa, but more importantly that because of their ties, they have stayed in American Samoa and are continuing to contribute to the economy. As one person stated, “These longliners, they are Samoan owners. They’re our people.”

For some, it has less to do with ethnic identity than their personal commitment to American Samoa. Among the alia fishers, this commitment typically comes through the practice of Faʻa Samoa. Among the monohull longline owners the commitment was described through the practice of Faʻa Samoa but also by the fact that they have stayed in American Samoa when others did not, namely the longline vessels that came to American Samoa from Hawaiʻi but left once the catch decreased. As they described, “this is more than running a business, we live here.” People associated with both alia and monohull longline fisheries recognized those who were not native American Samoans but who had adopted and contributed to the culture (predominantly by sharing their catch) to emphasize the importance of commitment to community over solely considering ethnic background.

Fisheries Materials and Technology

Vessels and gear

Materials have modernized for both the alia and longline. The only instance of traditional material use in fisheries mentioned in the interviews was a feather lure (although the species of bird supplying the feather has also changed from traditional times). While some interviewees expressed a certain amount of nostalgia for fishing methods that use traditional materials, there was no expressed interest in returning to it. One interviewee declared that they were not going to go back to a canoe just because it might be more cultural. None of the interviewees felt that modern materials were incompatible with cultural fishing. The materials used were not as important as other factors, such as the distribution of the catch.

Infrastructure needs

Infrastructure that supports all aspects of the fisheries value chain is an important aspect of fisheries materials. Most of the infrastructure concerns were voiced by the alia fishers. Because alias have operating costs, one of their main concerns is their ability to sell what they characterize as their leftover fish to cover expenses. There is a minimum volume requirement to sell fish to the cannery, which alias are generally too small to meet from a single fishing trip. Sometimes, the cannery is unable to take fish, and alias do not have on-board fish storage capacity. Alia fishermen indicated that they would benefit from some way to hold fish until the cannery can accept it or pool their fish to make a large enough batch to meet the cannery's minimum requirement. There were questions about why an ice house was being set up on Manu'a and not Tutuila.

Furthermore, there were concerns about the local Saturday fish market. Many alia fishers mentioned selling their catch on the side of the road because rent was too high at the local government-run market to make it worthwhile to sell there, although there was hope that new management would bring needed changes.

Fisheries Practices

Fishing practices related to how people fish could include which species are targeted, as well as where and when fishing occurs (Table 1). While these practices are associated with specific shore-based fisheries, such as atule, they appear to be less important as a marker of culture for alia and monohull longline fisheries. There were some instances where bottomfish were prized because elders appreciated their taste, but other species such as yellowfin tuna were also sought after for their use in *oka*, a dish often shared during Sunday meals. However, in terms of culture, what, where, and how fish were caught appeared to be much less important than why it was caught and what happened to the fish.

Fishing value chain – Market access

Many alia fishers requested a protected localized market niche. They were frustrated that monohull longliners could sell their miscellaneous catch locally and at what they characterized as a lower price, securing contracts with restaurants, schools, and prisons and competing within the limited local market. As previously mentioned, the local government-run market was not seen as a viable option due to high prices charged to fishermen to sell fish, but there was hope for

reform. From the monohull longline perspective, because they often operate with a thin margin or sometimes at a loss, the ability to sell on the local market can make a difference to their operations.

Governance

Spatial rules

Monohull longlines have substantially higher operating costs than alias, especially for fuel. They feel restricted by both having to travel such a great distance to an area where they are allowed to operate and then not being able to follow the fish if they enter the LVPA area. However, a number of alia owners and captains felt that because the longlines were able to go farther, they should be restricted to staying farther away. Alias cannot travel as far, and if the longliners came into the area they can access, the alias perceived that nothing would be left for them. Some wanted to know what they would get in return for giving up the space that they felt had been protected for them.

Cultural mediation

In one of our coordination discussions, the idea of local mediation was suggested. This could include having the matai lead community discussions regarding the tension between alia vessel owners and longline owners. We will elaborate on this in the discussion.

Future of the Fisheries

Alia and monohull longline fishers share a perception that their fisheries are very precarious, and the loss of fishing would be devastating, both culturally and economically. The fragility of the fisheries' future was mostly associated with personal observations in a decline in catch rates. Despite this outlook, there are fishers working to amass the financial resources to rebuild their boats or to buy new vessels. Alia fishermen feel that opening up the LVPA will further limit their ability to rebuild the fleet, with some believing that allowing the larger vessels in will lead to an "ocean drought" where there are no fish left.

This is sharp contrast to the monohull longliners who feel that opening up the LVPA to fishing is one of the few options that could help their situation. In addition, they pointed out that the monohull longline fleet provides the only U.S. albacore to the cannery for contracts that require U.S. fish such as for the U.S. military. As one owner stated, "It would be sad to me to say there is no more American Samoan longliner. Because I think that's something that is a good thing that we're involved in all fisheries. That as a Territory, to be able to be in all aspects of the fisheries. Not just bottomfishing but being able to utilize all the waters around us."

DISCUSSION

The purpose of this study was to examine the alia and monohull fisheries with respect to their cultural fishing practices. There appears to be a common frame of reference when people think about "traditional" or "cultural" fishing. While materials have modernized for both the alia and monohull vessels, core concepts of *Fa'a Samoa* have remained: family, faith, respect, sharing, and community. Both types of vessels were seen as contributing to cultural practices through sharing their catch, helping and cooperation, and by not wasting the fish. The emphasis of the intangible over material culture has also been seen in other contexts where courts have upheld fishing treaty rights with Native American tribes based on right to access historic fishing grounds, not method of take (e.g., see the *Boldt Decision, United States v. Washington,* 384 F. Supp. 312, W.D. Wash. 1974).

While both types of vessels participated in non-commercial and commercial activities, the associated operating costs resulted in opposing narratives. Alias were depicted as fulfilling cultural obligations first by setting aside the best (and most profitable) fish to give away. Monohull longlines set aside the most profitable fish to meet their high operating costs, with the cultural obligations fulfilled by distributing the miscellaneous catch not sold to the cannery. As more capital investment is needed to own and operate modern vessels, people who are not involved in those fisheries appear to view them as contributing less to cultural needs. This is likely because people outside a fishery do not see the balance sheet that separates out operating expenses and personal profit. However, the stated practice of fulfilling cultural obligations first also puts alia fishers at a financial disadvantage. This is reflected in their desire for a protected market niche or other infrastructure that could help them market their fish. In addition, alia fishers felt a sense of potential loss, that the LVPA exemption would take something away from them without "giving anything back." While studies have not identified any gear conflicts or competition for catch, the spatial nature of the alternatives under discussion visually reinforce this concern.

The direct suggestions we heard for things that could be "given back" involved a protected market niche or investment of capital, such as grants, an ice house, and an improved local market, all of which may be problematic in a regulation. Many of these initiatives have been developed in the past and could be included in future initiatives, such as the fisheries development projects outlined in the American Samoa Marine Conservation Plan and approved by the Governor, Council, and NMFS. Interviewees did not have suggestions to address other concerns, but some warrant further attention. For example, there was a common concern about opening up the LVPA waters to "all the big boats." The LVPA exemption is only allowed for U.S. flagged vessels, and it will be important to set clear limits and criteria for the types and origin of vessels allowed, as well as time frame, ideally based on discussions with all parties. Another concern was overfishing in the area. Including interested parties in the design, setting of thresholds, and implementation of future monitoring programs will be important in the perception of credibility for monitoring results, as has been seen in other natural resource conflicts (Leong et al. 2009).

The Council process offers opportunities for public input and discussion, which informs decision-making. The Council also includes voting members that represent both fisheries as well as the American Samoa government through the Director of American Samoa's DMWR.

However, discussions about the LVPA exemption have still become contentious. One suggestion for diffusing the tension between the alia and longline fisheries included mediation led by local leadership, similar to recommendations by Severance and Franco (1989). Given that the dispute is framed as being about cultural fishing practices, utilizing cultural practices to make that determination could be more satisfactory to those involved. Engaging the *matai* to broker the discussion would also address some of the concerns over the U.S. Federal Government ultimately making decisions about fishery resources in the American Samoa Exclusive Economic Zone (EEZ).

As in many natural resource controversies, the stated dispute (protection of cultural fishing practices) may mask deep-rooted or identity-based conflicts (Madden and McQuinn 2014). As Governor Lolo noted in his remarks to the council, “The LVPA issue has far reaching implications for the people of American Samoa particularly on the principle of sovereignty, and the responsibility of the United States to honor its promises inherent in the ratification of the Deeds of Cession by the Congress of the United States,” indicating that the issue of cultural fishing practices sits within a larger governance question of who should make decisions about the American Samoa EEZ, and how those decisions should be made.

Developing a cultural fishing conceptual framework (Figure 1 and Table 1) and applying it to better understand American Samoa boat-based fisheries helps shed light on fisheries adaptations to emerging social and economic realities in American Samoa (Figure 3). However, it will not answer underlying issues of governance and process. In fact, the process of deciding which practices are “more cultural”—and, hence, which fisheries should be afforded protection—may have only increased the tension between the local alia and longline fisheries, as well as their supporting institutions. By focusing on the voices from the alia and longline fisheries in this important discussion, we hope this study helps identify some of the underlying processes fueling the controversy as well as potential ways forward.

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