

ALASKA'S COMMUNITY DEVELOPMENT QUOTA PROGRAM: A COMPLEX INSTITUTION AFFECTING RURAL COMMUNITIES IN DISPARATE WAYS

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1. INTRODUCTION

The privatization of access, also known as rationalization, is a management framework that takes a public resource, such as a fishery, and restricts access to it through the establishment of property rights. These property rights are often initially assigned based on historical fishing efforts, with fishermen¹ (usually boat owners, to the exclusion of skippers and crew) allotted a percentage of the total allowable catch (TAC) in a particular year. Future allocations are often market-based. This kind of resource allocation, often called an ITQ (individual transferable quota) or catch share, is supposed to slow the race for fish, increase efficiency (through consolidation and market allocation), increase fishermen's safety, and create a stewardship ethic based on the rational benefits of protecting a resource from which one can benefit into the foreseeable future— at least in theory.

In reality, access privatization programs have had mixed results. Such programs, by design, lead to a concentration of ownership, which often leads to a reduction in the number of younger fishermen entering fisheries, an increase in processor control, overcapitalization of quotas, increasingly rigid class divisions in fishing communities, a flow of quota from locals to outsiders, and arm-chair fishermen who lease out their quota for others to fish [1, 2].

Privatization has also been associated with a decrease in income, loss of jobs, and reduction in cultural values [3, 4]— while the achievement of stated goals, such as reducing overcapacity has been hit or miss [5]. Access privatization, thus, has done more to increase economic efficiency and consolidate wealth than it has to protect resources and livelihoods.

In recognition of some of these short-comings associated with fisheries privatization, the western Alaska Community Development Quota (CDQ) program was designed to bring economic opportunities, in the form of fishing quota, to rural Alaskan communities whose residents would otherwise have been locked out of fisheries via the privatization process. At first a temporary measure, but later enshrined in law with the American Fisheries Act of 1998, the CDQ program allocated a share of the total allowable catch for Bering Sea pollock (and, later, other Bering Sea fisheries) to corporate entities created to represent rural Alaskan communities that met the

¹ We use the term 'fishermen' as a gender-neutral term—as is common usage in Alaska.

following criteria: (1) were located within 50 miles of the Alaskan Bering Sea coast, (2) were an Alaska Native village under the Alaska Native Claims Settlement Act (ANCSA), (3) consisted of residents for whom >50% of their commercial and subsistence fishing was conducted in the Bering Sea, and (4) did not have previously developed harvesting and processing capability [6]. A total of 55 communities initially met these criteria and, over time, an additional 10 communities were brought into the program [6]. Currently six corporations represent a total of 65 Bering Sea communities (Table 1) and own quota shares in all privatized access Bering Sea fisheries: pollock, halibut, sablefish, crab, and groundfish [7].

Unlike ANCSA corporations, which are for-profit entities that own and manage all Alaska Native land and resources across the state, the CDQ organizations were created as non-profits with separate, for-profit subsidiaries. This structure emphasizes the unusual, hybridized nature of the program. Benefits to community members aren't distributed directly through dividend payments and are, instead, disbursed at a community level, through local development initiatives. Development initiatives are broadly defined, but must work toward four goals, as specified in the Magnuson–Stevens Fishery Conservation and Management Act (MSFCMA): (1) provide eligible communities with a chance to participate in Bering Sea fisheries, (2) facilitate economic development in western Alaska, (3) reduce poverty and provide social and economic benefits for community residents, and (4) establish sustainable and diversified local economies in eligible communities [8].

To monitor progress toward these goals, CDQ organizations were initially required to submit management plans to the state of Alaska for annual approval. Organizations seen as mismanaging their assets could be penalized with a reduction in their quota allocation. However, the CDQ groups found this requirement onerous, inhibiting long-term investment strategies and, as a result of their lobbying efforts, this oversight process was dismantled in 2006 [8]. Since then the allocations have been static.

While the CDQ program has generated a great deal of profit [9], relatively little work has been done to examine the program's success in meeting its mandated goals. What little assessment exists focuses on revenues earned and dollars spent [e.g., 10, 11, 12]. This is a tenuous measure

of success for a number of reasons. First, most CDQ corporations (with the exception of the Central Bering Sea Fishermen's Association or CBSFA) are headquartered in urban hubs such as Anchorage and Juneau, far from the rural communities they are designed to represent. As such, their employees are, by and large, not hired from within their region. These wages, therefore, do not end up in-region and cannot be counted as community development. The only direct community ties mandated by MSFCMA are via a corporate Board of Directors— of which 75% must be fishermen from in-region communities [8]. While board members are locally elected allowing, in theory, local control over the corporation's investment and development ideology, the democratic process is imperfect and equitable representation is often difficult to achieve.

[Insert Table 1 here]

Furthermore, some of the stated program goals may conflict with each other. Though development projects within CDQ are broadly defined, in general, benefits can accrue to communities in two ways: either directly, through resident participation in CDQ fisheries (specifically halibut) or indirectly, through investments made possible by the lease of CDQ allocations. However, halibut (the only CDQ species regularly harvested by rural community members) is caught as incidental, or prohibited species, catch in many of the other CDQ fisheries (and especially within the groundfish fisheries of the industrial Amendment 80 fleet— Atka mackerel, Pacific Ocean perch, flathead sole, rock sole, and yellowfin sole). Thus, seeking income from groundfish quota may interfere with local small-scale halibut fisheries and recent declines in halibut total allowable catch have crystalized this conflict, such that in some years the allocation of incidental halibut bycatch is greater than that for the directed fishery (a similar conflict exists between subsistence salmon fisheries and CDQ pollock fisheries; [13]). In 2013, for example, the directed halibut fishery landed approximately 21.9 million net pounds. Estimates of total halibut discards (dead and alive) from all non-directed and directed halibut fisheries were approximately 39.4 million net pounds. Thus, roughly 1 in 3 pounds of halibut caught in the Bering Sea were retained in the directed fishery and the remaining 2 out of 3 pounds were thrown overboard [14, 15]. These cuts and wastage have depressed local halibut fisheries, factors potentially contributing to several recent processing plant closures and causing some fishermen to leave the fishery. In this case, high corporate profits may mask local realities.

Thus, for managers to understand the breadth of CDQ's impact on western Alaska, a broader analytical lens is needed.

Well-being, with its holistic focus on wealth, happiness, and overall quality of life, presents an alternative set of measures with which to assess the success of fisheries management programs such as CDQ. First popularized in the fields of health and psychology, the term "well-being" was used to help flesh out the concept of health. More than the absence of illness, health requires the presence of factors permitting a high quality of life— things such as strong social connections, satisfaction with life [16], and the material means to achieve these goals [17]. Though broadly defined, the term well-being speaks to happiness and liberty, health and relationships, a sense of purpose and self-actualization [16, 18]. When applied at the community level, it addresses the health (its stability and functionality), happiness, and prosperity of a particular group of people [19]. Furthermore— and in contrast with more common economic assessments of fisheries— well-being incorporates both subjective (experiential and perceptual) and objective (material welfare and psychosocial functioning) assessments of life [20]. Such an emic approach is of particular use in the Arctic, where indigenous cultural values and goals can differ substantially from western ideals. Research has shown that Arctic communities value autonomy, cultural identity, and ties to nature [21].

We therefore, sought to investigate the ways in which CDQ has affected the well-being rural Alaskan communities. Spring-boarding off of recent research by Szymkowiak and Himes-Cornell [7], which sought to document CDQ work via interviews with CDQ corporate staff and residents in the Bristol Bay region, our efforts focused on well-being as described by community residents and used local CDQ-supported halibut fisheries as a concrete and easily comparable example of development work. We sought to answer two questions: (1) how have CDQ efforts helped and/or hindered local development goals, and (2) what lessons can managers learn from these outcomes to better structure future management plans?

2. METHODS AND THEORY

2.1 Methods

The analysis presented in this paper draws upon data collected as part of a broader research project, one centered around qualitative network modeling of halibut fishing and its contribution to well-being in Bering Sea communities (*in progress*). However, the majority of Bering Sea halibut fishermen access the fishery through CDQ and, as such, the resultant ethnographic data provided a rare opportunity to study CDQ's impact on community well-being. Selection of study communities was, therefore, opportunistic, reflecting our broader interest in commercial halibut fisheries of different sizes and scopes.

Additionally, our study design was informed by a constructionist epistemology, acknowledging that viewpoints, especially those surrounding political and resource use conflicts, are relative and that scientific observers bring to their work a set of assumptions and biases that can shape their understandings [22, 23]. We therefore used ethnographic research to discover the breadth and diversity of viewpoints on a specific topic [24], rather than making a generalizable assumption about universal truth, as is standard in positivistic research [23]. Constructivist approaches allow for a detailed exploration of power dynamics, as dissenting viewpoints are often suppressed by those with power. In rural Alaska, where colonialism has served to marginalize Alaska Native voices, such an approach is, therefore, decolonial in nature, prioritizing the voices and stories of participants over indicators and metrics created by researchers.

Focus groups and interviews were conducted in four Bering Sea communities, St. Paul, Savoonga, Mekoryuk, and Unalaska (Fig. 1), representing three different CDQ corporations: Central Bering Sea Fishermen's Association or CBSFA (St. Paul), Norton Sound Economic Development Corporation or NSEDC (Savoonga), and Coastal Villages Region Fund or CVRF (Mekoryuk). Though Savoonga is the largest of these three communities (population 671), St. Paul has the greatest degree of fisheries infrastructure with a year-round processing plant (Table 2). Savoonga's processing plant is seasonal (Table 2) and, as of early 2019, Mekoryuk no longer has an operational processing plant. The selection of St. Paul and Savoonga, therefore allowed for a comparison between highly developed and less developed fishing communities, while Mekoryuk's inclusion allowed for an assessment of the ways in which community well-being change with the loss of access to CDQ halibut.

We also chose to include the community of Unalaska, an ex-officio member of the Aleutian Pribilof Island Community Development Association or APICDA. Though home to the Qawalangin tribe (a group of Aleuts comprising approximately 4% of the local population; [25]), Unalaska was left out of the CDQ privatization process due to its status as a highly-developed fishing port at the program's implementation. An analysis of Unalaska, therefore, sheds light on the ways in which the creation of program boundaries and participation criteria affect communities both within and outside of the CDQ program. Further information about how APICDA interacts with its constituent communities is available in previously published research [26].

It is important to note that our study communities did not include representative communities (ex-officio or otherwise) of two CDQ groups, Bristol Bay Economic Development Corporation and Yukon Delta Fisheries Development Association, nor did they address any potential differences among in-land versus coastal communities. The results, therefore, should not be taken as all-encompassing, but rather as a sketch outlining the breadth of different possible outcomes.

Research visits were conducted throughout 2017, beginning in February and concluding in September. Trips varied in length from five to seven days and, when possible, began with an initial focus group in which community members were asked to outline their general concerns with and their relationships to halibut.

[Insert Figure 1 here]

[Insert Table 2 here]

Focus groups were then followed up with individual interviews with residents (emphasizing those with experience in commercial halibut fishing), for which a small gratuity was offered (\$20–\$50, with elders given higher rates). Interviewees were selected via snowball sampling, a technique in which potential respondents are identified by previous respondents [29]. Finally,

when practicable (three out of four communities), initial research results were presented to community members on the final day of the research trip and feedback solicited.

Interviews (n=48 with 49 participants), focus groups (n=8, ranging from 3-8 participants), which lasted from 10 min to 2.75 hours, were audio recorded and transcribed, then inductively coded in Atlas.ti using a grounded theory approach [30]. Grounded theory is a process that leads to the development of codes, which are organized into themes that serve as the base for theory development [31]. We used a line-by-line coding approach, continuing until saturation was reached (*i.e.*, the point at which additional data ceases to add novel insight; [32]). Themes were developed that articulated local conceptions of well-being and the ways in which CDQ and/or halibut fisheries affected it, as well as economic development, and sociocultural needs in Arctic communities

2.2 Well-being in Arctic and sub-Arctic fishing communities

To structure our analysis, we drew upon the well-being framework created by Breslow et al. [33]. Defining well-being as: “a state of being with others and the environment, which arises when human needs are met, when individuals and communities can act meaningfully to pursue their goals, and when individuals and communities enjoy a satisfactory quality of life”, the authors reviewed literature to create a fisheries-tailored list of attributes within four separate domains of well-being, which correspond to arenas of management responsibility: *conditions*, *connections*, *capabilities*, and *cross-cutting* [33]. *Conditions* refer to situations in which “human needs are met” and include “the tangible qualities of environment, economy, safety, and human health”. *Connections* refer to “being with others and the environment” and include “the tangible and intangible interrelationships we have with other people and with nature and our cultural values and identities”. *Capabilities* refer to “factors directly enabling individuals and communities to act meaningfully to pursue their goals” and includes “activities, knowledge systems, political participation, and governance”. And, finally, *cross-cutting* refers to aspects of “equity and justice, security, resilience, and sustainability” necessary for a “satisfactory quality of life now and into the future”. These four domains of well-being structure our results below.

3. RESULTS

Relationships between well-being and the CDQ program were generally seen as positive, but spanned the gamut in degree. Some communities derived increased autonomy from the CDQ program while others felt frustrated, disenfranchised or even actively sabotaged by their CDQ group. We discuss these different relationships below.

3.1 St. Paul Island, Alaska

St. Paul is a small (~500 people), mostly Aleut (or Unangan) community located on the northernmost Pribilof Island in the Bering Sea. Though the island was known to pre-contact Aleuts, year-round settlements weren't established there until the mid-1700s— and these communities were founded by enslaved Aleuts involved in fur seal harvest for the Russian fur trade [34]. Fur seal harvest remained the primary industry of the islands, through their acquisition by the United States in the 1860s [35], but declines in the resource eventually led to a moratorium on harvest in 1986. In response, residents fought to transition to a fishing economy. They sued the federal government (for details explaining the suit's rationale, see Jones [34] in the early 1990s and, with the funds they won, residents built a harbor to support the development of local commercial fisheries (specifically halibut). Though halibut fishing remains an important source of local employment, landing taxes on locally processed crab provides the majority of the city's budget.

CDQ's inception correlated with St. Paul's transition to a fisheries economy and, as such, residents were politically motivated, organized, and well-placed to take advantage of the program. Despite initial talks about forming a CDQ group with the nearby community of St. George (located on an island 45 miles to the south), St. Paul eventually split off on its own and formed the Central Bering Sea Fishermen's Association (CBSFA). Unique among the Alaska CDQ groups, CBSFA is the only CDQ group that represents a single community and is headquartered in that community, rather than in an urban hub. They own five subsidiaries, three vessels outright, with shares in four more [36]. Over the period of 2007-2017, the corporation paid \$23,744,532 in contributions to local programs and infrastructure investments (around \$9.5 million to community and education programs, \$1.5 million to local entities— such as the city, school district, church, and tribal government, and \$14 million to infrastructure investments—

such as improvements to the small boat harbor, purchase of a community fuel truck, renovations to the school, construction of a fire station, and a new vessel repair building; [36]).

3.1.1 St. Paul residents' perceptions of CDQ contributions to well-being

Overall, CDQ has had a positive influence on well-being in St. Paul. The program enables residents to live a marine harvesting way-of-life (**connections**) because of their increased autonomy (**capabilities**), which has allowed them to strengthen their local economy and reduce poverty (**conditions**), increasing community resilience (**cross-cutting issues**).

3.1.1 St. Paul connections

Interviews indicated that residents of St. Paul place a great value on their local culture. Predicated on a marine harvesting way-of-life, this culture is rooted in Aleut practices and values, such as subsistence harvest (the traditional hunting, fishing and gathering of plant and animal resources) and distributional equity. Commercial fishing is, therefore, more than just a source of income for which some dollar amount could be substituted— it underpins the local and culturally important way-of-life. Fishermen described their relationship to commercial fishing in terms of a love for the water and the satisfaction that comes from hard work. Many expressed a desire to keep fishing until they died— even if their children had to haul them onto the boat in a wheelchair. Further, the impacts of fishing ripple out into the community beyond those who work directly on the boats. Tweens and younger teenagers are paid to bait hooks onshore, while wives and sisters make big meals for the fishermen to take out on their day trips. As one woman put it, *“Halibut provides an identity for the community. [The fishing season] may only be three months out of the year, but it is intense. I change my hours, I have to be home in the morning and at night to cook and support the fishermen. It’s a change of lifestyle for that period. We’re a fishing household.”*

Being out on the water, learning local currents and fishing spots, harvesting, sharing, and eating halibut— all of these actions strengthen the community. As one resident described it, *“Employment [in the commercial halibut fishery] is more important than if somebody just wanted to pay you off. It’s not the money coming in, it’s the value.”* Another added, *“It’s the value you give your son when he’s fishing on your boat with you, that he can give to his son.”*

That's intergenerational benefits... You can't just give us money for our halibut. We have to be able to fish, because that's who we are."

Commercial fishing is the cornerstone of local ways-of-life in St. Paul— and that fishery is viable in large part due to the CDQ program. While a handful of residents own individual fish quota (IFQ), the majority of fishing in St. Paul is conducted via community quota owned by CBSFA. In addition to allowing locals to fish this quota, CBSFA subsidizes the fishery in a number of other ways: constructing a small boat harbor, serving as the local fish buyer, negotiating with the owners of the on-island processing plant to keep processing going when economic pressures might otherwise force the plant to shut down, and advocating for fisheries policies that will help keep the local fishery both economically and ecologically sustainable.

3.1.2 St. Paul capabilities

Interviews also indicated that the ability of local residents to maintain their way-of-life would not be possible without the autonomy and control provided by their CDQ group. Beholden to only one constituent community, CBSFA is able to tailor its development projects to the needs of St. Paul's residents. Community residents elect board members in annual meetings that have a festive air— where door prizes, company swag, and a community feast (complete with halibut pie) draw in residents and encourage participation. If community members have a grievance they want aired, they can speak at the annual meeting or stop by the main office, located on the easternmost of the two hills that make up town. They can also stop by the president's house— he lives just a few doors down from the office.

This organizational structure, focusing on one community in which they do business and from which they draw staff, has turned CBSFA into a forceful instrument of local will. The policies and development projects in which the corporation engages are, therefore designed with the specific goal of supporting local well-being and ways-of-life. Thus, the design and oversight of a local commercial halibut fishery has been of primary importance to the organization. As one employee stated, *"We [CBSFA] want the fishermen to have all the benefits, we don't want to gouge them for anything... [We set a cap], like 10% per vessel, that's the max you can catch and then after that you can't fish anymore... It's spreading the wealth among all the vessels that fish.*

You have to think about the little guy. He's gotta try to make it." The suite of rules structuring participation in the local fishery are voted on by local fishermen annually to form a document called the Local Halibut Fishery Management Plan for CDQ. In addition to the vessel harvest cap, rules include: (1) membership in CBSFA, (2) CDQ-caught quota must be sold to the local co-op, and (3) a CDQ-set start date for the fishery's opening.

To protect the viability of the local halibut fishery, CBSFA has also become an active participant in fisheries management decision-making. Management meetings are typically held in urban hubs (such as Anchorage and Juneau), meaning that rural participants incur substantial travel expenses in order to participate. However, the income generated by CBSFA's non-halibut quota has helped to subsidize local participation. CBSFA's corporate status has also lent local concerns greater political clout. CBSFA board members have held positions on both International Pacific Halibut Commission (IPHC) and the NPFMC Advisory Panel, where they've pushed for halibut bycatch reduction and an increase in quota allocations for their region. Further, when management entities have been slow to act, CBSFA has taken matters into their own hands, refusing to harvest quota they saw as likely to have a high degree of bycaught halibut. As one CBSFA staffer put it, *"In 2015 and 2016 we actually left our yellowfin and rock sole in the water to make a statement that halibut's more important to us."* With its resources and corporate structure, CBSFA is well-positioned to make local voices heard.

3.1.3 St. Paul conditions

Interview respondents indicated that CBSFA's presence in the community has helped increase the conditions necessary for well-being in two ways: (1) stabilizing the local economy, and (2) reducing poverty. With the reauthorization of the Magnuson-Stevens Fisheries Conservation and Management Act in 2006 [8], CDQ organizations gained the right to invest up to 20% of their profits in non-fisheries projects each year. This has allowed CBSFA to broaden its impact beyond St. Paul's halibut fishery. Working with local entities, such as the tribe, city, school district and village corporation (see Case and Voluck [37]) for more information on the corporate structures of Alaska Native villages), CBSFA has established a number of local development projects. These projects include: building renovations, new construction, and program development. CBSFA supported programs vary from education-based (such as an on-island

summer science camp and Montessori preschool program) to language revitalization programs, financial support for the church, and beach clean-ups [38]. Furthermore, the influence of CBSFA's contributions to these programs then has a ripple effect—freeing up funds in other organizations that can be used in other projects.

On a smaller scale, CBSFA works to reduce poverty via household-level donations. Many of these programs focus on elders and include boxes of processed crab and halibut, as well as fuel and utility subsidies. Other programs provide residents with college scholarships and training grants. As one CBSFA employee said, *“When we first started CBSFA, all the money was only going to the fishermen and we couldn't get it out there [to the community]. Now we're able to get it out there... We're able to get it to the elders who couldn't be part of the fisheries. We're able to get it to the younger kids who can't be part of the [fishing] community.”*

3.1.4 St. Paul cross-cutting issues

While CBSFA's political and economic clout hasn't made life perfect in St. Paul, it has certainly helped increase the community's resilience. Without the corporation's advocacy in the management realm and economic support in the form of subsidized local fish prices and processing, the local halibut fishery would likely have closed several years ago. Marginally profitable at best, the processing plant on St. Paul owes its continued operation to the processing quotas built into the crab rationalization program, such that a certain percentage of crab caught in the Bering Sea is required to be landed on St. Paul. As halibut catch limits have declined, summer halibut processing has become less and less profitable. As one CBSFA employee put it, *“Right now we're subsidizing this fishery, CBSFA, hopefully trying to break even, but if we were strictly for-profit, like other seafood buyers, we would have shut this place down already, halibut buying [that is]... We might make money this year, we've got a new marketing plan. But in the past we ran this CDQ halibut fishery, local fishery, just to break even. CBSFA, hopefully we break even, and all the benefits of this halibut fishery would support the local fishermen, economy, local fishing economy.”*

As halibut catch limits have declined, so has the profitability of the local halibut fishery and while residents are fighting tooth and nail to defend this fishery, they are also working on

alternatives. In 2012—2014, CBSFA went to the NPFMC to develop a potential Pacific cod fishery based out of St. Paul. Switching from a high-value fish like halibut (\$6/lb) to Pacific cod (\$0.35/lb) wouldn't be easy. It would require a shift in gear and fishing techniques, necessitating greater investments of both time and money for individual fishermen. But if halibut fishery were to shut down, Pacific cod would be an alternative. As one CBSFA staffer explained, “*We already planned for the [halibut] fishery getting shut down or not being viable. So we developed the P-cod fishery, but it's a whole different ballgame. Less valuable and our boats are not really set up for that.*”

Finally, in St. Paul, the CDQ program is seen as an issue of equity and justice. As an Alaska Native community with a brutal history of slavery under both Russian and American control (Jones, 1980), St. Paul residents feel like CDQ is an important step toward self-determination and reconciliation. As one community member put it, “*Regarding Aleut culture and changes, started way back in 1741, the culture was dramatically wiped out— genocide and then we're brought here [the Pribilof Islands]. We lived here with 200 years of fur seal culture, then that ended and we scrambled to develop a commercial halibut fishery culture. I guess evolution of our cultures are always getting wiped out is like the big thing out here. Aren't you guys just tired of wiping us out? ... Managers have never really experienced what we've experienced in the Aleut culture out here since the 1700s of constantly getting destroyed and wiped out and resources taken away and taken to other places for profits, and just wiped us out again over and over. I mean just, don't they learn from history? ... How many times do we have to get destroyed out here because we're less people?*” Though their problems have by no means disappeared since the creation of CDQ, the program has given them a powerful tool with which to advocate for themselves, which, in turn, fosters a sense of hope for future.

3.2. Unalaska Aleut residents: Disenfranchised by CDQ process

Unalaska is the largest community in the Aleutian Islands, at around 4,400 people. Historically an Aleut (or Unangan) hunting and fishing camp, today Unalaska is known for its port—Dutch Harbor, one of the busiest fishing ports (by volume caught) in America. Fisheries support businesses and processing form the base of Unalaska's economy, drawing workers from around the world. Many of these workers live in company-provided barracks and send remittance

payments to extended families in numerous countries. While many people think of this workforce when picturing the residents of Unalaska, the community is also home to the Qawalangin Tribe, which has around 400 registered members (around 4.3% of the total population; [25]).

When the CDQ program was developed, Unalaska was specifically excluded due to its extensive, existing fishing infrastructure. However, the community does have ex-officio status within the Aleutian and Pribilof Island Community Development Association (APICDA) due to its Aleut heritage and position as an economic and transportation hub for the Aleutian region [39]. As an ex-officio member, Unalaska receives very limited benefits from APICDA, including scholarships, training grants and employment in APICDA subsidiaries. These benefits are available to all Unalaska residents, not just those with Aleut heritage.

3.2.1 Unalaska Aleut residents' perceptions of CDQ contributions to well-being

Unalaska is a heterogeneous community (Table 2) and, as such, the opinions of its residents differ according to demographic differences. In general, the well-being of international and domestic workers who have come to Unalaska for economic opportunities has not been affected by CDQ. However, Aleut residents see their exclusion from the program as unjust (**cross-cutting issues**). Local access to marine resources (**connections**) has declined over time, sovereignty (**capabilities**) has been eroded as fishing corporations gained more political clout in the region, emotional and mental health (**conditions**) have declined as commercial trawling and fish processing has damaged the bay ecosystem. Residents wonder to what extent these difficulties might have been mitigated by inclusion in the CDQ program.

3.2.2 Unalaska Aleut residents' connections

Aleut residents of Unalaska have deep, cultural ties to the sea, according to our respondents. Like their relatives in St. Paul, they have historically harvested fish and marine mammals and value a marine-harvesting way-of-life. However, unlike St. Paul, very few tribal residents are currently involved in commercial fisheries. Those that do commercial fish, use IFQ to access the fishery. While many residents initially qualified for IFQ, this quota has been largely sold off in the past decades. As one resident put it, “*Basically you have to be a fisherman all year round in order to*

[make it]... I tried to work a fulltime job and then go out fishing on vacation time and weekends and that sort of thing, so it was a little harder to do.” Where halibut fishing used to be an activity that could supplement other sources of income, privatization turned it into something that only a serious, full-time fisherman could afford to participate in. Interviewees estimated that 4-5 tribal members still commercially fish halibut and that most of these individuals had not fished in the past year, due to low halibut total allowable catch limits.

3.2.3 Unalaska Aleut residents’ capabilities

Our interviews indicated that tribal residents of Unalaska experience a lack of autonomy, in contrast to the high degree of autonomy that their relatives in St. Paul enjoy. Though the tribe has pushed to protect their local waters from trawling and to strengthen regulations on fish processing outfall, they are alone in this work. While tribal representatives attend fisheries management meetings when funding permits, their community is only an ex-officio member of APICDA and, as such, remains unable to leverage that corporation’s influence. A tribal official spoke to their frustrations, saying: *“Our tribal population, we’re less than 3% of the [Unalaska] population. Our median income is about \$14,000 a year and when you start taking away our Native foods [via in-bay trawling and pollution], it really does enforce an additional oppression that we are already trying to heal from, for Pete’s sake. We’ve been left out of the CDQ program...”*

This lack of autonomy has real impacts on the community. Declines in the bay ecosystem, for instance, have led to changes in subsistence practices. The best halibut fishing used to be in the nearby waters of Unalaska Bay, but now residents must take their boats into rougher waters, seeking bays that require four or six hour trips to reach. The fuel costs make such trips exorbitantly expensive and, to cut costs, residents pool resources. As one subsistence fisherman put it, *“Price of fuel, that’s why we try to go like three or four of us together. Ordinarily we’d go three boats in different directions. Now we’re using one boat to go in one direction and if you don’t get any for that day, the next good [weather] day you go to a different place.”* This reduces resiliency— if they fail to find fish, rather than one man coming home empty handed, four come home empty handed.

3.2.4 Unalaska Aleut residents' conditions

Despite their lack of autonomy, residents of Unalaska experience the strongest economy in the region. Fisheries landing taxes fund city operations, while support sector jobs provide numerous employment opportunities. With all these employment opportunities, come large work forces and higher prices— especially for housing. Many tribal residents see the lack of affordable housing as a detriment to community stability. As one resident put it, *“A young person couldn’t afford to live here.”* This tension sets the scene for conflict between industry and tribal representatives. Though they share a common goal in the desire for a long-term, sustainable economy, they differ in their understandings of what this might mean for the community as a whole. In general, tribal members are much more concerned with pollution and ecological impacts. They vote differently than immigrants from other countries and parts of the US, and— with fewer numbers and fewer financial resources at their disposal— they are less likely to see their goals achieved. This inability to actualize their goals causes a mental health strain.

3.2.5 Unalaska Aleut residents' cross-cutting issues

Unalaska’s exclusion from the CDQ is seen by tribal residents as an injustice and one in line with the history of colonial oppression experienced by the community. Older residents still remember their internment during World War II and how the lack of plumbing and insulation caused many to die. Seeing their local waters fished by outsiders and used to dump fish offal, feels like more of the same. As one tribal leader said, *“Why don’t we have quota? Why don’t we have tribal community quota? Why aren’t we involved? We’re forever asking for handouts, but... it would be nice to spend this energy building rather than having to fight or repair.”*

Many residents believe that tribal members and other small-boat rural fishermen were forgotten when the CDQ program was developed. A former fisherman explained it this way, *“They said Unalaska was already fully developed, as far as fisheries. I argue that they forgot the local small boat fishing people who have a hard time trying to expand and do anything because they don’t have that pool of money to support them like other places do.”* The seemingly arbitrary demarcation of their community as fully-westernized and developed, rather than Native has created a deep sense of injustice among tribal residents.

3.3 Savoonga: Community development supported by CDQ group, but local autonomy lacking

Savoonga is an Alaska Native community of around 700 people located on St. Lawrence Island in the Bering Strait. Residents have strong cultural ties to their Siberian Yupik heritage; subsistence is a major part of the local economy (with an emphasis on walrus harvest) and many residents remain fluent in their Native language. However, the community has relatively little in the way of a cash economy. Year-round jobs include work at the tribal government, school district, airport, and two small stores. Seasonal work includes occasional construction projects and participation in the local halibut fishery (both catching and processing fish).

Prosecuted in small (16-24ft) aluminum skiffs, the Savoonga halibut fishery differs from most commercial halibut fisheries in Alaska. Savoonga fishermen don't use hydraulic winches, instead pulling their skates up by hand, in crews of three to six. Co-captains take turns leading out a subset of the crew and the shares tend to be evenly split among crewmembers and captains. Due to the grueling physical nature of the fishery, participants tend to age out in their late 40s and early 50s.

Norton Sound Economic Development Corporation (NSEDC) is the CDQ group for this region. The corporation serves a total of 15 communities, though only two participate in a local halibut fishery: Nome (the regional hub) and Savoonga. Headquartered in Anchorage and Nome, NSEDC acts as a fish buyer, supporting regional participation in salmon (non-CDQ), crab, and halibut fisheries. They have also invested in local infrastructure projects, low-interest loan programs for fishermen, community level grants, as well as, scholarships and trainings.

3.3.1 Savoonga perceptions of CDQ contributions to well-being

In general, Savoonga residents see CDQ as supporting local well-being. The program enabled the development of a commercial halibut fishery, allowing residents to leverage their marine harvesting way-of-life (**connections**) into cash— a valuable resource in a community with very little economic opportunity (**conditions**). However, residents are often frustrated by the lack of local control (**capabilities**), which has decreased security (**cross-cutting issues**).

3.3.2 Savoonga connections

Interviews indicate that subsistence is the cornerstone of life in Savoonga, for reasons both cultural and pragmatic. Though rich reserves of marine resources lie all around (walrus and seal, salmon and halibut), the community's remote location means there aren't many economic opportunities. However, up until the CDQ program's establishment, Savoonga did not have a commercial halibut fishery because they lacked a fish buyer. Through local efforts, and in coordination with NSEDC, residents established a local processing plant and commercial fishery in the mid 1990s.

More than a simple source of cash, commercial fishing aligns with local cultural norms of autonomy, being out on the water, hunting, and harvesting. Most families own a small skiff for subsistence purposes, and these boats are pressed into service for the commercial fishery. Similarly, networks of extended family members (cousins and siblings) are leveraged for crew. The time spent on the water strengthens relationships. The work is hard, but satisfying, and it serves as an important source of income. When asked what he liked about fishing, one fisherman put it this way, "*[I like] everything. The work, the baiting. I love when I feel that halibut tugging [on the line. I'm] wanting to catch more and more, especially when there's one after the other, feeling them coming up. One comes out and, [it's like] got one, keep it pumping!*"

This work, and the joy it entails, would not be possible without NSEDC's assistance and the creation of the CDQ program. No residents qualified for halibut IFQ and there was no fish buyer on the island. Furthermore, the cost of fuel remains very high and many could not afford to fish without NSEDC's payment options, which allow the cost of bait and fuel to be taken out of their checks, rather than paid up front. The commercial halibut fishery in Savoonga is a purely CDQ creation.

3.3.3 Savoonga capabilities

For all its cultural strength, Savoonga is a community with little autonomy and limited voice in management realms. They send no representatives to fisheries management meetings and, in general, community members have little knowledge of current management agendas. The one exception to the lack of management involvement is the Bering Sea Elder's group— a quorum of regional elders who follow fisheries policies, offering recommendations to managers, and to

which Savoonga contributes one board member. Savoonga residents interface with fisheries management via NSEDC, which holds at least one on-island community meeting each year, before the start of fishing in July.

While the community and NSEDC enjoy a mostly positive relationship, according to respondents, there is one notable area of contention— Nome’s participation in the CDQ halibut fishery. A Savoonga politician describes it thusly, “*One of the biggest problems that we face on the island is, when the [CDQ] quota is allocated, the Nome fishers can wipe out the majority of that quota.*” As things currently stand, NSEDC’s halibut quota can be fished by fishermen residing in either Savoonga or Nome. And while fishermen from Savoonga work on small skiffs lacking hydraulics, Nome fishermen do not. Their boats tend to be 30-34ft long and are fully outfitted with hydraulics. Once they start fishing, the halibut quota is reached in a few days. In recognition of this conflict, and the way that declines in halibut quota over the past five years have intensified said conflict, NSEDC has instituted a “late start” for Nome fishermen. Residents of Nome are not allowed to participate in the CDQ halibut fishery until the Norton Sound summer red king crab fishery is closed— usually sometime in late July. This gives Savoonga an approximately two-week head start on halibut fishing.

While Savoonga residents appreciate this head start, they remain frustrated by Nome’s continued presence in the fishery. Savoonga residents see Nome— the regional hub, with a population of 3,800 and a strong, mining-based economy— as a fully developed community and, as such, a community that ought not to have qualified for inclusion in the CDQ program. As one politician explained, “*I’ve asked this question many times throughout the years... [why] was the city of Nome included [among] these economically depressed rural communities... They have hotel owners, restaurant owners that have big boats.*” A fishermen echoed these concerns. “*Our fishing’s kind of over when [Nome fishermen] start, because we do all ours by hand— no hydraulics... They probably put out 8,000 feet of line every time— 10,000 feet. We only put out 1,800 feet of line.*” Another fisherman agreed. “*We try hard to get our own quota, but it’s hard. [Nome fishermen] switch from crab to halibut and can get 2000lbs a day. They have 30-40ft boats and our biggest boat is 20ft and everything is manpower.*”

In 2016, Savoonga residents harvested about 23,000lbs of halibut, while Nome fishermen took the rest— around 42,000lbs [40]. That’s nearly twice as much fish caught by fewer than five boats in a span of one to two weeks. Add to this the perception that Nome is a fully developed community and not dependent upon these resources in the same way Savoonga is, and the conflict crystalizes. While NSEDC is cognizant of this strife, they are beholden to both communities and thus must straddle an uncomfortable line, attempting to support both. Unlike CBSFA in St. Paul, NSEDC cannot act as an advocate for local agendas. Instead their role is that of an outside arbitrator, mediating between communities. They cannot play favorites and, as a result, their actions can undercut local attempts at autonomy.

3.3.4 *Savoonga conditions*

Savoonga’s economy is based on local services and the largest employers are the school, store, city, clinic, and tribe, according to interviewees. Altogether these entities employ around 64 people in a community of 700. The importance of the commercial halibut fishery is, therefore, clear. Residents not only participate in fishing, they work at the processing plant, as well, bringing cash employment to an additional 60-80 people each summer. As one fisherman put it, *“I think the fishing’s a big part of the money for the whole community because it’s an opportunity for everyone to work, even at the fish plant.”* The cash earned at these jobs is then spent in the community, circulating between residents in an economic multiplier effect. Another fisherman added, *“We live off the halibut, the ocean around here... The ocean is our store. [If the fishery stops] I ain’t got no job to go buy at the store.”*

NSEDC supports the commercial fishery by operating the processing plant, buying and marketing fish, providing gear loans, and allowing fishermen to get fuel and bait on credit (taken out of their checks) instead of paying in advance. NSEDC’s contributions to the community, however, are not limited to the halibut fishery. The organization has also been involved in a number of development projects. As one NSEDC employee put it, *“The way our projects often work is, it’s the local agencies or entities that take the lead on that and then we’re ready to come in and help when matching funds are needed.”* Efforts have included work on a community boat ramp (though the rough winter weather later destroyed it) and no-strings annual contributions to the municipal government (a program called Community Benefit Share). NSEDC’s cooperative

attitude is further visible in their approach toward company owned assets. Heavy equipment, such as loaders, are shared with other community entities for use in development projects.

3.3.5 Savoonga cross-cutting issues

By and large, CDQ serves as a stabilizing force in Savoonga. The commercial halibut fishery provides a steady, reliable source of cash income, increasing security and making it easier for residents to plan for the future. Fishing also increases resilience by providing an alternative source of income— should subsistence hunting prove poor or construction projects be canceled. And, as construction projects wane due to reductions in federal and state grants, fishing becomes more important. As one woman put it, *“The last two summers we’ve had nothing, no jobs. Halibut has been it.”*

However, the CDQ program also creates a sense of inequity and injustice in the way halibut quota is shared with the more developed community of Nome. As a politician put it, *“We should have gotten our own CDQ group, same as the Aleut people [of St. Paul]. For us to be included on the Norton Sound coast, from our point of view... the rural communities got the short end of the stick.”* The program’s very structure pits communities against each other, forcing them to vie for the same, limited pool of resources. This conflict and the underlying sense of being wronged, serve to undermine some aspects of local well-being. This is not say that CDQ is harmful— overall the program has been greatly beneficial to residents— but rather to stress the complexity of well-being and how institutional structure can have important and sometimes adverse impacts. This example also highlights how the relational and comparative aspects of wellbeing – in this case the differential needs, realized benefits, and perceptions of fairness between Nome and Savoonga – affect subjective measures of wellbeing.

3.4 Mekoryuk: Local autonomy undermined and in conflict with CDQ group

Mekoryuk is a mostly Cup’ig community of around 200 people, located on Nunivak Island. Subsistence is an important part of the local economy and species harvested include seals, sea lions, walrus (at least historically), fish, reindeer, and musk ox. The cash economy is similar to that of Savoonga, with the school, tribe, city, clinic, and store serving as the largest employers.

Occasional summer construction jobs and, in winter the reindeer slaughterhouse, offer additional employment opportunities.

Coastal Villages Region Fund, or CVRF, is the CDQ corporation for this region. Representing a total of 20 communities, CVRF is headquartered in Anchorage and, while they used to act as a seafood buyer for the region, the subsidiary that oversaw local fish purchases (Coastal Villages Seafood) closed in around 2013 and the organization no longer buys halibut or salmon from any of their regional villages. Instead, the corporation has invested in pollock, cod, and crab fisheries— purchasing both quota and ships with which to harvest this quota. The halibut quota formerly fished by residents is now leased out and the revenue split among all 20 communities via several programs, such as the People Propel low-interest loans and Community Service Centers. Additionally, CVRF is involved in fisheries management, advocating for a reallocation of CDQ. This campaign, called “Just Fix CDQ”, would see quota redistributed on a per-capita basis (a shift that would transfer quota from low-population CDQ corporations, like CBSFA in St. Paul and APICDA in the Aleutian Islands, to CVRF, the highest population CDQ group). Such a shift would, ostensibly, allow CVRF to spend more money on their constituent communities.

3.4.1 Mekoryuk perceptions of CDQ contributions to well-being

Mekoryuk residents see CDQ as undermining local autonomy and hostile to local attempts at gaining autonomy. For around 20 years, residents participated in a local CDQ-based commercial halibut fishery, but this fishery was effectively ended five years ago when CVRF closed the island’s processing plant (**connections**). This closure not only undermined resource connections, it also removed a valuable source of cash employment in a community with few employment opportunities. The loss of this fishery has, therefore, led to an increase in poverty and an increase in stress and local conflict (**conditions**). In an attempt to re-establish this fishery, residents have become more politically active, joining the IPHC and trying to organize with other communities in their region (**capabilities**). Their efforts, however, have put them into conflict with their CDQ

group, creating a sense of injustice and fueling worries about the community's future (**cross-cutting issues**).

3.4.2 *Mekoryuk connections*

Residents of Mekoryuk have always harvested fish and mammals from the waters around their island. However, commercial fishing didn't begin until the mid-1980s. Initially residents harvested herring, switching to a CDQ-supported halibut fishery in the mid-1990s. At the time of its closure, this halibut fishery supported around 20 boats (with crews of 2-4, though not all crew members were from the community), as well as providing jobs in the processing plant. And, while residents sometimes grumbled about the price paid for fish (residents often received a dollar or two lower at their local processing than what was offered in nearby Toksook Bay), they were generally pleased with the fishery. It provided income and stability, a chance to spend time on the water, and strengthened relationships between family members who served together as crew. Fishermen described the work as fun, but hard, and very satisfying. The money helped them make ends meet and lessened local poverty.

When asked how residents, in general, felt about the fishery's closure, one elder put it this way, “[Residents] are hurting because... it's the only source of income, like I said. Every time when [the fishery] is opening, they get excited and get ready, ready to go.” The loss of cash income means an increase in poverty and privation, with a concomitant increase in despair and hopelessness. People rely on friends and family members when they can, sharing subsistence food, pooling resources to go subsistence hunting, and borrowing money to keep the heat and electricity running. In a community with such a weak economy, however, borrowing isn't a viable solution in the long-term. Those doing the lending can only part with so much and, as that limit is reached, resentment between the employed and unemployed grows. In a focus group, two former fishermen described it this way:

Arthur (pseudonym): *So what happens if there's no jobs... and you're forced to do what you need to do and you have other bills on top of that?*

Chris (pseudonym): *It separates friends.*

Interviewer: *It creates conflict?*

Chris: *It does. Because you've got the people that have been unemployed for years and you have the people that have their jobs for a lot of years and...*

Arthur: *How do you make...*

Chris: *It becomes the haves and have-nots.*

3.4.3 *Mekoryuk capabilities*

In response to the fishery's closure, Mekoryuk's residents have not been idle. They have communicated their frustration to CVRF multiple times, lobbying for the board to reopen the fishery. These concerns were not well received and, in response, the Mekoryuk board member was stripped of membership. In the past five years, and since the fishery's closure, as many as seven different representatives have sat on the CVRF board on Mekoryuk's behalf. Board member term limits are six years and the high turnover has left community members angry and frustrated.

One former fisherman put it this way, *"In [CVRF's] bylaws, there's a little phrase, maybe two sentence phrase, that if you jeopardize the company as a board member, if you open your mouth in the wrong way, you're going to be boosted out of the company as a board member. It's in their bylaws. It's incredible. And there's no clause for ousting the, recalling the board of directors whatsoever. Nothing."* A local politician agreed, *"We had CVRF representatives fired by [CVRF], because they, our representative, would fight for fishing, halibut fishing, and they'd get fired by [CVRF]. And, if I'm not mistaken, right now we don't have a representative for CVRF as a board member, for the community. Every year when we elect a new member they get fired by [CVRF] because if you make waves with CVRF about halibut fishing, you're gonna get fired... In the last five years, we had seven members fired... We had one elected and [CVRF] wrote a letter [saying], have a new one. He can't run."* In the community, the result of these

interactions is a sense that the CDQ group has become an adversary, actively working to frustrate local attempts at autonomy.

In response, the community has gotten involved in fisheries management. They have become voting members of the IPHC and have testified at NPFMC meetings. As one local leader put it, *“Back in December 2015, we [local fishermen] got together voluntarily and we talked about the halibut fishery that was not happening, so we discussed the idea of forming a fishermen’s group, the push for that was to get our voices heard basically at the IPHC level. To have, to be delegates sent to the IPHC to have a voice from the fishermen here in our community, Nunivak Island. So basically, the intent was to have a voice, because we felt like the CDQ company, Coastal Villages Region Fund was not doing their supposed job to be a voice for the people in the region. So that was the main push for that.”* While CVRF leadership sends their own representative to these meetings and is aware of Mekoryuk’s recent engagement, the corporation has never corresponded about it with the community. As the local leader put it, *“The only information that we got was that they literally cut us off.”*

Residents’ attempts at getting information from local CVRF employees have been equally frustrating. CVRF owns two buildings in Mekoryuk—the processing plant, which has been closed for over five years and now has a grassy sand dune blocking the front door, and a Community Service Center. The Community Service Center employs three to four residents, including a mechanic and several program administrators who oversee the selection of summer student interns, scholarship distribution, and local benefit programs (including subsidies for heating fuel and utility bills, as well as small discretionary funds disbursed annually to the tribe). During a focus group, one resident called down to the local CVRF office, looking for information on the exact number of participants in the local fishery the last year that it operated. He described his interaction, thusly, *“It appears that we cannot get the exact number from Coastal Villages Seafood Mekoryuk office because they gotta have approval from the office in Anchorage to give out that number.”* This comment was met with knowing nods and rolled eyes from the other focus group members and another resident explained this reaction, thusly, *“The local CVRF office, if you try to talk to them, they’ll say they need to get their supervisor’s*

permission. We [local residents] don't even know what the CVRF employees in town do. No idea."

The experiences of our research team align with this. The Community Service Center is a nicely appointed metal building located on the beach, next to the shuttered processing plant. Upon entering, visitors are required to log in, recording the time of their arrival and the purpose of their visit. Though not unwelcoming, employees are not allowed to speak to residents or visitors about any aspect of CVRF's programming— not even to describe their job title or the activities that go on the building— without explicit verbal permission of higher-ups in Anchorage. Such permission is rarely given. Our researcher waited 45 minutes while local CVRF employees contacted their higher-ups and were eventually instructed not to speak with her.

The lack of direct communication from CVRF has intensified residents' feelings of frustration and despair. Few residents have a clear idea as to why the fishery was shut down and if, or when, it will ever start up again. Questions put to CVRF employees are often ignored or put on hold as employees wait for permission from their distant supervisors before they address these questions. This foments more resentment and anger within in the community. As one resident put it, *"I'm so mad at them [CVRF], so I never contact them in any way."*

3.4.4 Mekoryuk conditions

Economic conditions in Mekoryuk have deteriorated since the commercial halibut fishery's closure in 2013 according to interviewees. The fishery was a source of income not only for fishermen, but for the processing plant staff (who came not only from Mekoryuk, but from villages across the region). It also increased cash flow within the community as fishermen purchased more food and gear from the store, bought fuel, and hired other community members to help in various ways, such as preparing meals. Without the fishery, many of these residents have been left with no reliable source of income.

Furthermore, the fishery's closure has turned CVRF's People Propel program into a burden from which many residents see no escape. Initially, the low-interest loan program allowed residents to buy fishing boats, motors, and other equipment (like snow machines or four-wheelers). The

purchaser was allowed two repayment options: (1) a monthly loan payment, or (2) an annual payment plan, taken out of their fishing proceeds. While fishermen who chose the latter option haven't been bothered by CVRF officials since the fishery's end, those who chose the former are expected to keep up on their monthly payments. When people fall behind on these payments, the boats are repossessed (three boats are currently listed on the CVRF website under auction and have likely been repossessed from residents in Tuntutuliak, Hooper Bay, and Nightmute).

Members of one focus group discussed it this way:

Richard (pseudonym): *People Propel program. Supposedly that would help, but no. It makes the individual look bad... Make your credit look bad. It's not good. You're unable to pay your bills because there's nothing else [no fishing, no employment options] to—*

Michael (pseudonym): *I'm into that [debt], yeah, that's me...*

Richard: *He's unable to pay for his bills.*

Michael: *I'm way down there.*

Richard: *And then his name is probably listed in the collections because of that. It makes an individual look bad. That needs to be fixed.*

Conceptually, many residents thought the People Propel program was a good idea, just poorly timed. Instead of initiating the program at the fishery's inception when people were initially buying gear and production was ramping up, it was initiated 20 years later, right before the fishery closed, leaving people no way to pay the loans off. Residents know of no efforts on CVRF's part to work with community members on repayment plans. Instead, people who thought they could count on the fishery to pay off their purchases are stuck with a debt they cannot pay off. Their credit is ruined and the equipment is repossessed. Even if the fishery starts up again, these residents will be unable to participate, having lost their gear.

3.4.5 *Mekoryuk cross-cutting issues*

The closure of Mekoryuk’s commercial halibut fishery was a serious blow to the community—decreasing security and resilience. Still, the community doesn’t feel the CDQ program is inherently flawed. The local commercial halibut fishery was an important driver of community well-being and, residents feel its closure can be traced back to a specific change in CVRFs investment strategy. In the early 2010s CVRF began purchasing larger boats with which to harvest their own pollock and crab quota. Before that, the organization leased out their quota to third party fishermen and, during this period, residents felt the organization was fairly responsive to local needs. The decision to purchase these boats, however, may have left CVRF overextended. Struggling financially, they may have been forced to make hard decisions — including closing the region’s CDQ halibut fisheries, leaving around a half dozen villages without this important source of income.

Mekoryuk residents also trace the inception of a CVRF program called “Just Fix CDQ” back to this shift in investment strategies. “Just Fix CDQ” is a campaign to see CDQ rights reallocated amongst the six CDQ groups. The proposed re-allocation would be based on regional population, benefitting CVRF, which represents the most populated CDQ region. The CVRF website explains their “Just Fix CDQ” campaign this way, *“The CDQ fish is in some ways just like the Alaska Permanent Fund and there is no justifiable reason for our residents to receive a smaller CDQ ‘dividend’ than our neighbors just up the coast in Emmonak or just down the coast in Togiak, or out on St. Paul and St. George islands.”*

However, in contrast to this statement, many residents we spoke with saw CDQ as a development program, rather than a dividend program. The distinction between the two centers on *work*. Mekoryuk residents see dividends as sources of unearned cash distributed equally to all, whereas economic development programs provide the opportunity to *earn* income. In the case of CDQ, the opportunity provided is access to fish quota. Through hard work and planning, residents are then able to turn this opportunity into economic gain. As one resident said, *“This assistance that we get— like from energy assistance and food stamps— I think that [is] really having the people here get lazy... so they rely on more of the free stuff than doing from the land.”* This statement reflects a recognition that local ways of life are based on a closeness with

the land mediated through hard work, and harvest of marine resources. Envisioning CDQ as merely a dividend program undermines these connections to land and resources and the disconnect between CVRF and local understandings of CDQ purpose do not bode well for the community's long-term well-being.

This philosophical disconnect is made worse by the lack of trust CVRF's actions have inspired in Mekoryuk residents. Restricting the flow of information, denying requests for information, and remaining unwilling to work with residents to mitigate unintended negative consequences of the People Propel program have all damaged relationships between community members and the organization. Good social relationships require both trust and communication. When an organization distances themselves from community members rather than working to embed themselves in local social network, conflict almost inevitably ensues.

This conflict, centered in the disconnect over the role of CDQ in the community, is the biggest threat to local resilience and stability in Mekoryuk. While community residents have become organized and are trying to come up with solutions that would allow them to continue fishing, they remain legally yoked to an organization that appears to have little interest in seeing them succeed. Leaving or switching CDQ groups is an action that would require congressional approval and, as such, they are likely to remain in this dysfunctional partnership for the foreseeable future. The community's long-term resilience will depend upon their ability to strengthen local autonomy and gain access to fish resources outside of the CDQ program.

4. DISCUSSION

Organizations aren't monolithic. Actors within systems have differing perspectives and goals and work to shape the institution to better serve their goals [41]. However, within the Community Development Quota corporations, this tension is exacerbated by the dual nature of the program, with its twin goals of community development and corporate profitability. As Mansfield put it, CDQ is both neoliberal policy and an alternative to it— an express attempt to prevent dispossession of the marginalized during the process of privatizing access to Alaska's fisheries [42]. Due to the intentionally broad language in legal documents, community members, elected

CDQ board representatives, CEOs, and employees each construct different understandings of these goals and of the best ways to achieve them. This plurality of views pits communities against each other and the typical (though not only) result is that marginalized communities become more marginalized. Thus, rather than the CDQ program being inherently a positive or negative influence on community well-being, it is the way in which these conflicts are navigated that determine how a particular CDQ corporation affects well-being in its constituent communities.

Among CDQ groups, this tension has been negotiated in different ways, resulting in different approaches toward community development. CVRF has shaped itself after an ANCSA corporation and treats regional residents more as shareholders than stakeholders. The primary economic benefit they provide is in the form of dividend payments and dividends can only be maximized by making the most economically efficient investments possible— even if this means closing down local fisheries. In contrast, CBSFA sees community development as more than providing dividend payments and works to protect and promote local fisheries as a way of maximizing local well-being. NSEDC and APICDA (as evidenced here and in other research: [26, 43]), in contrast, find a middle ground between these paths, recognizing the need to be as economically efficient as possible, while still preserving local fisheries. These different philosophical approaches interface with local goals in different ways and to different extents, supporting well-being in some ways and hindering it in others.

Despite this plurality of approaches among CDQ groups, the examples in this paper can provide some guidance in the design of future programs. These lessons include: (1) choosing which communities to group together should be done carefully and strategically and with input from communities, (2) more than a democratically elected board of directors is needed to ensure local opinions steer investments strategies, and (3) while preventing dispossession is a promising step forward in fisheries policy, truly equitable management will require actively decolonial policies.

During CDQ's inception, relatively little analysis was done to determine how communities were divvied up among CDQ groups, with the process essentially being left up to the communities themselves. While, in theory, this allowed communities to choose partnerships maximizing their

best interests, in the case of CDQ, the community organization process was rushed, framed in terms of strategic political power, rather than cultural well-being. The result, in several cases, was an organization bound to a large number of communities predicated on different ways-of-life (such as in CVRF where coastal, marine harvesting communities must vie with river-based communities dependent mainly on salmon for shared resources).

In such cases, it matters little how well intentioned the overarching corporate entity is, the dependent communities will always be pitted against each other, fighting over power and resources, attempting to meet local goals. This problem is not easily solved, however, as letting each community form their own CDQ group and then splitting the resources evenly amongst them would result in revenues too diffuse to do much good. While any additional funds benefit rural and indigenous communities, the process of achieving economic independence requires greater, more consistent resources [44], resources which CDQ and its lucrative fishing rights ought to be able to provide. Thus, future programs modeled off of CDQ should work carefully and thoughtfully with communities to create partnerships that support local well-being.

Thoughtful pairing of constituent communities, however, is a starting place, not a panacea. In any proposed partnership, it is unlikely all communities will have equal power and, without careful program design or some kind of oversight, these inequities are likely to increase over time. In its initial arrangement, the Alaska CDQ program did include oversight, in the form of annual reports submitted to the State of Alaska. Intended to assess the economic feasibility of each CDQ group's business practices, the oversight also served as a check on the development work these organizations did and many rural residents recall the process as fostering a greater degree of equity among the communities [26]. When the oversight process stopped in 2006, there was no one to monitor equity among communities but the board members themselves.

Though enmeshed in mixed-economies and hence dependent upon cash, research has shown that cash doesn't flow through indigenous communities in the same way that food does; specifically, money doesn't travel nearly as far or as fast as food [45, 46]. This leads to social stratification among the haves and have-nots, creating tension and resentment similar to that which we documented in Mekoryuk. Such intra-community patterns logically scale up to the inter-

community relationships represented by CDQ boards in complex ways based on individual perspectives and desires [47, 48]. To prevent this dynamic, managers would do well to make the community development goals of new programs clearer— divorcing economic success from well-being and incorporating specific measures and criteria surrounding the program's community development aspects so that they directly address well-being. Assessments of economic success as a measure of community development, especially when assessed at an organizational level as opposed to a community level, will always mask inequity and power differentials.

The best approach for designing future development programs is, therefore, to make them explicitly decolonial, by recognizing the history of colonialism that eroded local autonomy and encouraging policies that strengthen local and tribal rights and self-determination. In contrast, the CDQ program was actively assimilationist, seeking to integrate rural Alaska Native communities into the broader globalized economy. While the policy makers involved in the program's inception were attempting to prevent further injury to these communities (in the form of dispossession as the fisheries resources were privatized) their solution failed to take into account the history of colonialism in these communities, cultural differences, well-being, or way-of-life.

As structured, the CDQ program puts economic success above community development, such that development efforts must dovetail with economic efficiency in order to succeed. This meant initially partnering with foreign companies, leasing quota to factory trawlers, and buying catcher-processor boats of their own; none of these actions directly increased community well-being. Well-being could only be addressed indirectly, with the funds secured from these endeavors. In a decolonial approach, community well-being would be centered. Programs would be designed to support the development of local fisheries — which might look like current models of processing plants, docks, boats, gear, and crew or might look very different, depending on the community's needs and desires. Residents of Savoonga, for instance, see the fishery as a way to provide income to community members in need— often splitting profits equally among captain and crew. Equity is, therefore the end goal to be maximized.

Furthermore, future fisheries management programs must center local autonomy. Autonomy is one of the central tenets of well-being in Arctic communities [21], and has been greatly eroded in Alaska Native communities— the legacy of oppressive colonial rule persisting into the 20th century, and institutionalized colonialism and racism persisting to the current day [49, 50]. While poverty is a real concern in these villages, it remains only one of a suite of hardships caused by explicitly assimilationist policies seeking to destroy and erode Native cultures. Management programs such as CDQ, though well-intentioned, can serve to exacerbate such hardships by thwarting local efforts at regaining autonomy. CBSFA, by representing a single community (St. Paul) has provided residents with an unprecedented degree of self-determination and this autonomy has had a direct and noticeable influence on community well-being; of all the communities we visited, St. Paul residents expressed the most satisfaction with the CDQ program and had a clear sense that the program was supporting community well-being. In contrast, the major complaints of residents in Mekoryuk, Savoonga and— as documented in other research [26, 43] St. George Island, Alaska— with regard to CDQ, all centered around a lack of autonomy.

New programs, therefore, must require decolonial approaches that explicitly integrate participatory, decolonial socio-cultural analyses in their design. Ethnographic research, participatory modeling, and community meetings should work as two-way exchanges of information: informing and involving residents to achieve buy in, while providing policy-makers with a deeper understanding of community needs and goals. With a deeper understanding of community dynamics, community development programs can be made more explicit and tailored to local goals rather than using the amorphous measure of economic success as a proxy for community well-being. Such shifts in program design will increase the likelihood of equitable and sustainable outcomes. Furthermore, the process of consultation and local involvement, in and of itself, will increase local autonomy.

5. CONCLUSIONS

While using economic stability as a measure of program success may work well for much of fisheries policy, it falls short as a metric for community development efforts— particularly in

indigenous communities, like those of western Alaska. Economic theory praises efficiency and centers western ideas of rational individualism, both of which are at odds with the cultural values of Alaska Native communities. Commercial halibut fishing, for example, serves as more than a source of income for these communities, it supports specific ways-of-life, increases local autonomy and resilience, and strengthens community connections. When a cash payment is substituted for participation in these fisheries (as in Mekoryuk) residents suffer in ways invisible to market metrics. Thus, assessments of CDQ groups— hybrid corporate and non-profit entities— should reflect this dual nature, and include non-market metrics.

Choosing an appropriate measure of program success, however, is only one way in which program design affects communities. In developing CDQ, managers determined which communities were eligible for participation, cemented eligible villages into what are effectively permanent cross-community partnerships (in the form of CDQ corporations), and put limits on how program profits could be spent. Each of these decisions had profound implications for community wellbeing— and all were made without assessment of potential socio-cultural impacts (though a few basic socio-economic indicators were included). The result was such that, though all six Alaskan CDQ groups have proven economically successful, the extent to which they have increased community well-being varies widely both within and among groups.

This is a lesson with implications for fisheries management programs more broadly: variations in program design can mitigate or exacerbate the difficulties a community faces. Management programs should, therefore, be designed with great care and deliberation. Furthermore, the design process should be based on more than the economic data collected in community profiles. Program design must include detailed socio-cultural data. As shown in this paper, a relatively limited amount of fieldwork can provide a great deal of useful insight, and will be necessary to design programs with positive outcomes for rural and indigenous residents.

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THE WESTERN ALASKA COMMUNITY QUOTA DEVELOPMENT PROGRAM

- ★ Study communities
- CDQ communities
- CDQ groups

CENTRAL
BERING SEA
FISHERY'S
ASSOCIATION

ALUTIAN
FRIGID ISLANDS
COMMUNITY
DEVELOPMENT
ASSOCIATION

COASTAL
VILLAGES
REGION FUND

ARCTIC ECONOMIC
& DEVELOPMENT
CORPORATION

YUKON DELTA
FISH FARM
DEVELOPMENT
ASSOCIATION

BRISTOL BAY
LUCERNE
DEVELOPMENT
CORPORATION



Table 1 Names, number of communities represented, selected regional study community, and presence or absences of local CDQ halibut fishery in region by CDQ group.

| NAME | ACRONYM | VILLAGES | STUDY VILLAGE | HALIBUT CDQ FISHERY IN REGION |
|--|----------------|-----------------|----------------------|--------------------------------------|
| Aleutian Pribilof Island Community Development Association | APICDA | 7* | Unalaska | Yes |
| Bristol Bay Economic Development Corporation | BBEDC | 16 | None | Yes |
| Central Bering Sea Fishermen's Association | CBSFA | 1 | St. Paul | Yes |
| Coastal Villages Region Fund | CVRF | 20 | Mekoryuk | Not currently |
| Norton Sound Economic Development Corporation | NSEDC | 15 | Savoonga | Yes |
| Yukon Delta Fisheries Development Association | YDFDA | 6 | None | No |

* One of APICDA's seven constituent villages is an ex-officio member with limited rights.

Table 2 Study community characteristics ([25], [27], [28]).

| COMMUNITY | POPULATION | ALASKA NATIVE (%) | BELOW 125% POVERTY LEVEL (%) | SHORE-BASED PROCESSING PLANTS |
|------------------|-------------------|----------------------------------|---|--|
| Unalaska | 4,376 | 4 | 12 | >3 |
| St. Paul | 479 | 78 | 19 | 1 |
| Mekoryuk | 191 | 96 | 24 | 0 |
| Savoonga | 671 | 95 | 81 | 0.5 |