

AN ASSESSMENT OF THE SOCIOECONOMIC IMPACTS OF THE WESTERN ALASKA COMMUNITY DEVELOPMENT QUOTA PROGRAM

Prepared for the

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Abbreviations

ADCED	Alaska Department of Community and Economic Development
ADFG	Alaska Department of Fish & Game
APICDA	Aleutian Pribilof Island Community Development Association
BBEDC	Bristol Bay Economic Development Corporation
BSAI	Bering Sea and Aleutian Islands
CBSFA	Central Bering Sea Fisherman’s Association
CDQ	community development quota
CDP	community development plan
CFEC	Alaska Commercial Fishing Entry Commission
CVRF	Coastal Villages Region Fund
FMP	fishery management plan
NMFS	National Marine Fisheries Service
NPFMC	North Pacific Fishery Management Council
NSEDC	Norton Sound Economic Development Corporation
PSC	prohibited species catch
TAC	total allowable catch
YDFDA	Yukon Delta Fisheries Development Association

Executive Summary

This report, "An Assessment of the Socioeconomic Impacts of the Western Alaska Community Development Quota Program," was prepared by Northern Economics, Inc. for the Alaska Department of Community and Economic Development. The report provides an analysis of the socioeconomic effects of the Western Alaska Community Development Quota (CDQ) program, developed in 1992 as a means of extending the economic opportunities of productive fisheries in the Bering Sea and Aleutian Islands area to small, rural communities. This assessment of the CDQ program primarily relies on secondary information, including data on royalties, investments, revenues, income, and employment. An advantage held by this study over prior studies is access to nearly nine years of data on the CDQ program and the extensive reviews of this data undertaken by the State of Alaska. In addition, the current study was able to draw on community-level socioeconomic information from the 2000 U.S. Census, income data from the Internal Revenue Service, and recent fisheries statistics from the Alaska Commercial Fishing Entry Commission and National Marine Fisheries Service. A survey of CDQ community representatives was also conducted, but the intention of the survey was to supplement externally compiled data sets rather than to provide a separate evaluation methodology.

The total net income generated by the CDQ program from 1992 through 2000 was approximately \$116 million. Initially, program revenues were from royalties obtained from sale of quota species. Between 1992 and 2000, approximately \$198 million were generated from these royalty payments. Eventually, revenues were obtained from other sources such as investments and other business activities. Revenues minus royalty income for the program, 1992 through 2000, were equal to nearly \$68 million.

Over the duration of the CDQ program, annual pollock CDQ royalties have consistently exceeded \$13 million. In 2000, the CDQ groups received nearly \$33 million in pollock CDQ royalties, while royalties from the multi-species program provided the groups an additional \$7.4 million. The revenue stream from the lease of CDQ allocations has permitted the CDQ groups to make substantial fisheries-related investments. The value of CDQ group assets in aggregate increased from nearly \$15 million in 1992 to over \$152 million in 2000. All six CDQ groups have acquired ownership interests in the offshore pollock-processing sector. In addition, some CDQ groups have invested in inshore processing plants, motherships, and catcher processors that operate in the crab, halibut, and groundfish fisheries. These investments have significantly increased the participation of Alaska residents in fisheries dominated by Seattle-based companies. A number of CDQ groups have also promoted investment in local, small-scale fishing operations targeting salmon, herring, halibut, or other species. For example, CDQ groups have channeled significant resources toward local fisheries-related infrastructure development.

Training of CDQ community residents has been a primary objective for CDQ groups from the outset of the program. Over 7,000 people have been trained over the life of the CDQ program (there may be some double counting, as an individual person can take advantage of more than one training opportunity). CDQ groups spent approximately \$9.3 million on training from 1993 through 2000, for an average expenditure of about \$1,350 per training opportunity. Training programs include scholarship payments for college education as well as vocational and technical training,

Employment opportunities have been one of the most tangible direct benefits of the CDQ program. Jobs generated by the CDQ program included work aboard harvesting vessels, internships with fishing industry partners or government agencies, work at processing plants, and management/administrative positions. The CDQ program has created an excess of \$8 million in wages annually since 1997. From 1993 through 2000, management and administration positions accounted for about six percent of jobs and 24 percent of wages for CDQ groups. Pollock harvesting and processing accounted for 24

percent of the jobs and 26 percent of the wages. There may be some double counting of jobs, as an individual may take advantage of more than one job opportunity a year.

Adjusted gross income data from the Internal Revenue Service yields a rough approximation of the contribution of CDQ wages to regional income. CDQ-related income accounted for about 4.1 percent of the total gross income in CDQ communities in 1999. The contribution of CDQ wages differs across CDQ groups due to the presence or absence of communities with comparatively large populations and more diverse economies. A comparison of estimated average household gross income in 1991 (adjusted for inflation) with the average household gross income in 1998 revealed that, on average, CDQ communities experienced an increase in household income, with the exception of those communities represented by APICDA. The decrease in average household income between 1991 and 1998 in the APICDA region may have been due to the closure of local military bases.

There was no statistically significant difference between the average household gross income in CDQ communities and non-CDQ communities within the same boroughs or census areas during 1991 or 1998 as indicated by tests of equality of the means. Similarly, a comparison of per capita income data from the U.S. Census showed no statistically significant difference between the average per capita income in CDQ communities and non-CDQ communities during 1989 or 1999. One possible interpretation of these results is that the CDQ program has not been effective in significantly raising incomes in most participating communities. However, it is possible that income growth in participating communities would have been smaller without the CDQ program. Moreover, the analysis does not take into account changes in income that may have occurred since 1999.

Some of the income earned in CDQ jobs, as well as spending for supplies and services in support of CDQ projects, passes through local merchants, service providers, and others before leaking out of the region in exchange for imports. An estimation of these indirect economic impacts for fish harvesting and processing industries in the boroughs and census areas in which CDQ communities are located indicate that these impacts are relatively low. Nevertheless, every contribution to jobs and income helps in western Alaska communities.

By offering western Alaskans opportunities for periodic, well-paying employment in the fishing industry, the CDQ program has preserved options for the local people to continue some elements of their subsistence lifestyles. For example, seasonal jobs aboard industrial-scale fishing vessels targeting groundfish allow western Alaskans to return to their villages in time to participate in subsistence harvests of salmon and herring.

A mail survey of local leaders and public officials in CDQ communities revealed a high level of awareness of the CDQ program. However, some community leaders indicated that the benefits of the program have not been evenly distributed across eligible communities. A large percentage of the 30 communities that responded to the survey reported that local businesses have been positively affected by CDQ activities. Community representatives noted that fishery support businesses have benefited from the increased demand for marine fuel, fishing gear, boat repairs, etc. resulting from CDQ program initiatives that have led to an expansion of fishing and processing activity. In addition, it was reported that local businesses, in general, have profited from the increased purchasing power of local residents whose incomes have been raised by the CDQ program.

Overall, this analysis found that the CDQ program has increased the capacity of residents in western Alaska communities to create wealth. It has done so by increasing investment capital, employment opportunities, and the availability of skilled labor. To further examine the socioeconomic effects of the CDQ program on-site assessments of CDQ communities are needed. These assessments could adopt a "participatory" approach directly involving residents of CDQ communities in the development of appropriate criteria to evaluate the program and in the information gathering and review process.

Assisting communities to measure the overall effectiveness and impact of the Western Alaska Community Development Quota program would help both the State of Alaska and CDQ communities clarify the goals and objectives of the program.

1 Introduction

1.1 Study Overview

The Western Alaska Community Development Quota (CDQ) program was developed in 1992 as a means of extending the economic opportunities of the productive fisheries in the Bering Sea and Aleutian Islands (BSAI) area to small, rural communities. Since its inception, the CDQ program has been lauded as one of the most significant economic development programs in the State of Alaska. Through the CDQ program, residents of western Alaska coastal communities have become major players in some of the world's largest fisheries.

Determining how successful the CDQ program has been in meeting its goals is difficult. The term "community development" means different things to different people, and many of these interpretations are difficult to quantify and assess. The National Research Council (1999:36), for example, cites "enrichment of way of life and self-determination" as important aspects of development. While these may be worthy goals, an evaluation of the extent to which they have been achieved would require extensive individual and aggregate (community-level) self-assessments, either by selected informants or through surveys. Such assessments would involve the construction of a full range of objective and subjective indicators. Even then, there are likely to be major methodological issues in defining and measuring such things as "enrichment of way of life."

Given the conceptual and logistical difficulty in assessing the level of community development in this holistic sense, the current analysis focuses on the economic aspects of community development using widely accepted measures drawn from existing data sets that are relatively easy to quantify, generalize, and compare across communities and over time. Secondary data sources utilized included data on royalties, investments, revenues, income, and employment. A survey of CDQ community representatives was conducted, but the intention of the survey was to supplement externally compiled data sets rather than to provide a separate evaluation methodology.

Prior studies of the CDQ program have examined its economic impacts on western Alaska communities (see Northern Economics, Inc., November 2001), but most of these studies acknowledge that they were conducted too early in the life of the program to evaluate long-term trends. An advantage held by the current study is access to nearly nine years of data on the CDQ program and the extensive reviews of this data undertaken by the State of Alaska. In addition, this study was able to draw on community-level socioeconomic information from the 2000 U.S. Census, income data from the Internal Revenue Service and recent fisheries statistics from the Alaska Commercial Fishing Entry Commission (CFEC) and National Marine Fisheries Service (NMFS).

The report is divided into six major sections as follows:

- This first section introduces the report, including a discussion of data restrictions and the ways in which this economic analysis addresses those restrictions.
- The second section presents an overview of the CDQ program. A brief history of the program is provided, together with a description of the eligible communities and the CDQ allocation process. This section also provides a short review of the economic strategy of each of the six CDQ groups.

- The third section summarizes the economic benefits that are the direct results of the CDQ program by year from 1992 through 2000.¹ These benefits include revenue generation and the creation of income and employment opportunities. Income information for CDQ communities is compared to income information for non-CDQ communities located within the same boroughs or designated census areas.
- The fourth section presents information collected from a questionnaire survey of community representatives. The intention of the survey was to gather information that could be used to supplement data compiled from secondary sources.
- The fifth section provides a discussion of project findings and outlines possible areas for further study.
- The appendix section presents selected socioeconomic data from the 1990 U.S. Census and 2000 U.S. Census for CDQ communities, non-CDQ-communities within the same boroughs or census areas, and the State of Alaska. The information provides socioeconomic profiles and is intended primarily for reference purposes.

1.2 Data Limitations

The development of a comprehensive socioeconomic assessment of the CDQ program has been limited in the past by significant constraints on the availability and applicability of data. Specifically, assessments have been limited by the confidentiality of data and lack of community-level data. The discussion below examines these factors and describes how the timing and sponsorship of this socioeconomic assessment of the CDQ program created opportunities to overcome some of the data difficulties that hampered previous efforts.

1.2.1 Confidentiality of Data

One of the factors that have hampered efforts to assess fully the socioeconomic impacts of the CDQ program is the confidentiality of certain key data sets. Confidentiality restrictions apply to two principle sources of information:

1. Community development plans (CDPs) and annual reports submitted by CDQ groups to the Alaska Department of Community and Economic Development (ADCED) and NMFS
2. Primary fisheries data submitted by fishers and processors to NMFS and the Alaska Department of Fish & Game (ADFG).

Although this project encountered some data confidentiality problems, these problems were mitigated, in part, by the fact that ADCED allowed the contractor to review all the information contained in the CDPs and annual reports. In addition, ADCED recently reached an agreement with the AKFIN, ADFG, and NMFS that allows the agency and its contractors to summarize primary fisheries data when working with projects related to federal and State fisheries issues. Data confidentiality restrictions preclude the reporting of fishing and processing information for individual CDQ groups. This and other economic information is presented in an aggregate format that protects the proprietary nature of the data.

¹ Tables, but not text in this report, have been updated to reflect the most current information available.

1.2.2 Lack of Annual Community-Level Data

The second reason for the difficulty in assessing the CDQ program’s performance is that many of the annual statistics on employment, income, and other measures that would be valuable to include in a socioeconomic assessment, are available only at the level of the borough or census area. Borough or census area statistics may not accurately represent socioeconomic conditions within CDQ communities because these communities comprise only a small proportion of the total number of communities within these political/demographic areas. Table 1 shows that the 65 communities currently eligible to participate in the CDQ program account for less than half of the total population in the boroughs and census areas in which they are located. In only one borough (Bristol Bay) are all of the communities eligible to participate in the CDQ program. Therefore, much of the data that can be used to summarize impacts lacks the precision to be reliable.

Table 1. Population Estimates of CDQ Communities and Non-CDQ Communities by Borough or Designated Census Area, 2000

Borough or Census Area (C.A.)	CDQ communities			Non-CDQ Communities ^a			All Communities	
	No.	Population	% of Total Population	No.	Population	% of Total Population	No.	Total Population
Aleutians East Borough	3	860	31	4	1,837	69	7	2,697
Aleutians West C.A.	4	815	15	2	4,650	85	6	5,465
Bristol Bay Borough	3	1,253	100	0	1	0	3	1,258
Dillingham C.A.	9	4,207	86	2	715	14	11	4,922
Lake & Peninsula Borough	5	457	25	12	1,366	75	17	1,823
Bethel C.A.	17	5,611	35	19	10,395	65	36	16,006
Wade Hampton C.A.	8	5,173	74	7	1,855	26	15	7,028
Yukon-Koyukuk C.A.	1	194	3	38	6,357	97	39	6,551
Nome C.A.	15	8,488	92	4	708	8	19	9,196
All Boroughs/Census Areas	65	27,058	49	88	27,884	51	158	54,949

^a Population for non-CDQ communities includes population in remainder of boroughs or census areas.
Sources: U.S. Census Bureau; Alaska Department of Labor and Workforce Development.

Nor is it appropriate to use borough or census area statistics to assess socioeconomic change at the level of the CDQ group. As shown in Table 2, four of the six CDQ groups consist of communities in multiple boroughs or census areas. For example, the Yukon Delta Fisheries Development Association (YDFDA) CDQ group includes communities from the Wade-Hampton and Yukon-Koyukuk Census Areas, while the Bristol Bay Economic Development Corporation (BBEDC) group takes in communities from three different boroughs and census areas. In addition, the village of Grayling is the only CDQ community in the Yukon-Koyukuk Census Area.

Table 2. Relation of Boroughs and Designated Census Areas to CDQ Groups and Affiliated Communities

Borough or Census Area	Community		
Norton Sound Economic Development Corporation (NSEDC)			
Nome Census Area	Brevig Mission	Diomedede	Elim
	Gambell	Golovin	Koyuk
	Nome	Saint Michael	Savoonga
	Shaktolik	Stebbins	Teller
	Unalakleet	Wales	White Mountain
Yukon Delta Fisheries Development Association (YDFDA)			
Wade Hampton Census Area	Alakanuk	Emmonak	Kotlik
	Sheldon Point	Mountain Village	
Yukon-Koyukuk Census Area	Grayling		
Coastal Villages Region Fund (CVRF)			
Bethel Census Area	Chefornak	Eek	Goodnews Bay
	Kipnuk	Kongiganak	Kwigillingok
	Mekoryuk	Newtok	Nightmute
	Platinum	Quinhagak	Toksook Bay
	Tuntutuliak	Tununak	Oscarville
	Napakiak	Napaskiak	
Wade Hampton Census Area	Chevak	Hooper Bay	Scammon Bay
Central Bering Sea Fishermen's Association (CBSFA)			
Aleutians West Census Area	Saint Paul		
Bristol Bay Economic Development Corporation (BBEDC)			
Bristol Bay Borough	King Salmon	Naknek	South Naknek
Dillingham Census Area	Aleknagik	Clark's Point	Dillingham
	Ekuk	Manokotak	Togiak
	Twin Hills	Portage Creek	Ekwok
Lake and Peninsula Borough	Egegik	Pilot Point	Port Heiden
	Ugashik	Levelok	
Aleutian Pribilof Island Community Development Association (APICDA)			
Aleutians East Borough	Akutan	False Pass	Nelson Lagoon
Aleutians West Census Area	Atka	Saint George	Nikolski

Although this project found the quantity of community-level economic and social data limited, the timing of the project provided an opportunity to incorporate socioeconomic summary profiles of communities based on the 2000 U.S. Census. In addition, adjusted gross income data by zip code were available from the Internal Revenue Service for the year preceding the implementation of the CDQ program – 1991 – and for two years during the period that the program has existed – 1997 and 1998. An analysis of the zip code boundaries showed that, in most cases, they closely coincided with what could be considered community boundaries. Lastly, the project collected new community-level data by means of a mail survey administered to local leaders and representatives in all of the CDQ communities.

1.3 Related Reports

Northern Economics, Inc. produced three other reports as part of this evaluation of the CDQ program and they are described below.

- Northern Economics, Inc., November 2001. *Annotated Bibliography of Selected Reports Related to the Community Development Quota Program of Western Alaska*. Prepared for the Alaska Department of Community and Economic Development, Division of Community and Business Development.

This report provides an annotated bibliography of previous publications related to the CDQ program. The documents reviewed are presented in Table 3.

Table 3. List of Reviewed CDQ Program Reports and Studies

Author	Title	Publication Date
E3 Consulting	Economic Impacts of the 1992/93 Pollock Community Development Quotas	June 1994
Edgar Blatchford	Working Together for Community Economic Development in Rural Alaska	Winter 1994
Jay C. Ginter	The Alaska Community Development Quota Fisheries Management Program	1995
Alaska Department of Community & Regional Affairs ¹	Economic Impacts of the Pollock Community Development Quota Program	April 1995
Jim Richardson, ResourceEcon, Northern Economics, Inc., and Stephen R. Braund & Associates	Potential Impacts of CDQ Options for Western Alaska Communities	June 1995
Mary C. Pete	Alaska's Community Development Quota Program: Community Awareness Response. A Report of Research Findings	December 1995
Robert Townsend	An Economic Assessment of Alaskan Community Development Quotas	1996
Kacy Collons Keys	The Community Development Quota Program: Inequity and Failure in Privatization Policy	1997
Northern Economics, Inc. ²	Task 1 Report: Summary of Currently Available Information Relevant to the Social and Economic Database for the Western Alaska Community Development Quota Program	March 9, 1998
Northern Economics, Inc. ²	Task 2: Social and Economic Database for the Western Alaska Community Development Quota Program: Discussion Worksheet and User Survey	March 19, 1998
Alaska Department of Community & Regional Affairs ¹	Economic Impacts of the Pollock Community Development Quota Program	May 1998
Northern Economics, Inc. ²	Task 3: Summary of CDQ-SED User-Survey Responses	August 8, 1998
Northern Economics, Inc. ²	Task 4: Final Report. Contents and Implementation of a Social and Economic Database for the Western Alaska Community Development Quota Program	September 10, 1998

Author	Title	Publication Date
North Pacific Fisheries Management Council	Environmental Assessment/ Regulatory Impact Review/Final Regulatory Flexibility Analysis for Amendment 45 to the Fishery Management Plan for Groundfish in the Bering Sea and Aleutian Islands Area-Permanent Extension of the Allocation of Pollock to the Western Alaska Community Development Quota Program	December 1, 1998
National Research Council	The Community Development Quota Program in Alaska	1999
AdTech Consulting Group, Inc.	Implementation of a Social and Economic Database for the Western Alaska Community Development Quota Program	June 1999
Northern Economics, Inc. and North Pacific Fisheries Management Council	Analysis of AFA Processor Sideboard Limits for Groundfish and Excessive Share Caps for BSAI Pollock Processing	January 2000
National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Alaska Region	Alaska Groundfish Fisheries Draft Programmatic Supplemental Environmental Impact Statement	January 2001
Alaska Department of Community and Economic Development ¹	Economic Impacts of the Multi-Species Community Development Quota Program	June 2001
North Pacific Fishery Management Council and National Marine Fisheries Service, Alaska Region	Regulatory Impact Review/Initial Regulatory Flexibility Analysis for Proposed Amendment 71 to the Fishery Management Plan for Bering Sea/Aleutian Islands Groundfish	November 15, 2001

¹ These State of Alaska reports are discussed under the 1995 report.

² These NEI reports are discussed under the March 9, 1998 NEI document.

- Northern Economics, Inc., January 2001. *Review and Summary of Community Development Plans and Annual and Quarterly Reports submitted by CDQ Groups*. Prepared for the Alaska Department of Community and Economic Development, Division of Community and Business Development.

This report presents detailed information regarding the organizational structure, goals, quota shares, fishing industry partners, employment, training/scholarship programs, investment programs, and development programs for each CDQ group since the implementation of the CDQ program. The principal sources of information were official documents of the CDQ groups, including their community development plans and annual and quarterly reports. Many of the findings of this report have been incorporated in the current document.

- Northern Economics, Inc., December 2001. *Summary of U.S. Census and Alaska Department of Community and Economic Development Data Related to the Community Development Program of Western Alaska*. Prepared for the Alaska Department of Community and Economic Development, Division of Community and Business Development.

This report compiles selected fiscal, demographic and economic statistics from the U.S. Census Bureau and ADCED on communities participating in the CDQ program and on the boroughs and census areas in which those communities are located. The data collected falls into three general categories:

♥ # Community resources

Community resources include the public and private facilities and services available to a community. The demand for such services is directly related to a community's population characteristics as well as levels of economic activity and income. The information presented was obtained from the ADCED community profiles Internet web page that describes community affiliations, service providers, local taxes and revenues, outside revenues, operating and capital project revenues and municipal expenditures.

♥ # Population characteristics

The population data presented include the number of households; average household size, number of family households, ethnicity and average family household size. The main source of information was the 2000 U.S. Census.

♥ # Economic characteristics

The economic data collected include employment levels, occupational diversity, and distribution of employment by sector, labor force participation by groups, household income, poverty status, income, and levels of public assistance and welfare. At the time this report was being prepared economic information from the 2000 U.S. Census was not yet available. Consequently, most of the information presented is from the 1990 U.S. Census. Table 26 and Table 27 in this current document provide updated information from the 2000 Census on selected measures of socioeconomic development and demographic characteristics.

2 Overview: Community Development Quota Program and Communities

2.1 CDQ Program Implementation

The CDQ program was created by the North Pacific Fishery Management Council (NPFMC) in 1992 as part of the inshore/offshore allocations of pollock in the Bering Sea and Aleutian Islands (BSAI) fishery. As stated in the Council's Fishery Management Plan for Bering Sea and Aleutian Islands groundfish (BSAI FMP) (Section 5.4.7.4), the purpose of the CDQ program is as follows:

The Western Alaska Community Development Quota Program is established to provide fishermen who reside in western Alaska communities a fair and reasonable opportunity to participate in the Bering Sea/Aleutian Islands groundfish fisheries, to expand their participation in salmon, herring, and other nearshore fisheries, and to help alleviate the growing social economic crisis within these communities...

Through the creation and implementation of community development plans, western Alaska communities will be able to diversify their local economies, provide community residents with new opportunities to obtain stable, long-term employment, and participate in the Bering Sea/Aleutian Islands fisheries which have been foreclosed to them because of the high capital investment needed to enter the fishery.

CDQ program regulations went into effect on November 18, 1992. In 1996, the Magnuson-Stevens Fishery Conservation and Management Act institutionalized the program as part of the BSAI FMP.

The fishery resources allocated under the CDQ program are under federal jurisdiction, but the authority for implementation of the program is vested with the State of Alaska. The State is primarily responsible for the day-to-day administration and oversight of the economic development aspects of the program and for recommending quota allocations for each CDQ applicant. The specific criteria used to evaluate applications and make CDQ allocation recommendations are implemented in State regulations. The U.S. Secretary of Commerce and NPFMC review the State's recommendations and the Secretary of Commerce makes the final authorization for CDQ applicants to harvest quota.

Initially, the CDQ program set aside 7.5 percent of the BSAI's annual total allowable catch (TAC) for Alaska pollock for allocation to qualifying communities. Over the years, the CDQ program expanded to become multi-species in nature, encompassing groundfish and non-groundfish fisheries. In 1993, the NPFMC extended the community development quota to halibut and sablefish through amendment 15 to the BSAI FMP. Western Alaskan communities were allocated 20 percent of the BSAI sablefish and various percentages of the halibut in Bering Sea management areas 4B through 4E. The multi-species CDQ allocations, adding all remaining BSAI groundfish, prohibited species, and crab were implemented in 1998. Under the multi-species program, CDQ groups were allocated 7.5 percent of the quota for each species. Bering Sea opilio, bairdi, and king crab were phased in at 3.5 percent in 1998, 5 percent in 1999 and 7.5 percent in 2000. In addition, the NPFMC extended the pollock CDQ allocations permanently by including pollock in the multi-species groundfish CDQ program. The American Fisheries Act of 1998 increased the pollock allocation for the CDQ program from 7.5 percent to 10 percent of the annual TAC beginning in 1999. All CDQ species were allocated together for a two-year allocation cycle for the first time for 2001 and 2002.

2.2 CDQ Communities

As noted above, the purpose of the CDQ program is to help alleviate the growing social economic problems within western Alaska communities by facilitating the participation of these communities in the Bering Sea/Aleutian Islands fisheries and expanding their participation in salmon, herring, and other nearshore fisheries. The communities in this region are predominantly Alaska Native villages. In 2000, Alaska Native residents accounted for 86.8 percent of the total population of the CDQ communities. The communities are remote, isolated settlements with few natural assets with which to develop and sustain a viable diversified economic base. As a result, economic opportunities have been few, unemployment rates have been chronically high, and communities (and the region) have been economically depressed.

Table 26 in Appendix A shows selected quantitative measures of socioeconomic development in the CDQ communities, including unemployment, educational attainment, income and level of poverty. In comparison to aggregated information for all of Alaska, the CDQ communities appear to have more than the usual socioeconomic development deficits as indicated by education and income. Additional demographic data for the communities represented by each CDQ group are presented in Table 27. A notable demographic attribute is the large proportion of young people in the resident populations of some regions. Because of the comparatively young population, the average household size is greater than that of other Alaska boroughs and census areas and the State as a whole. This demographic attribute may also be linked to the relatively low economic activity in some CDQ communities, as a large segment of the population is below the prime working age of 20 to 64.

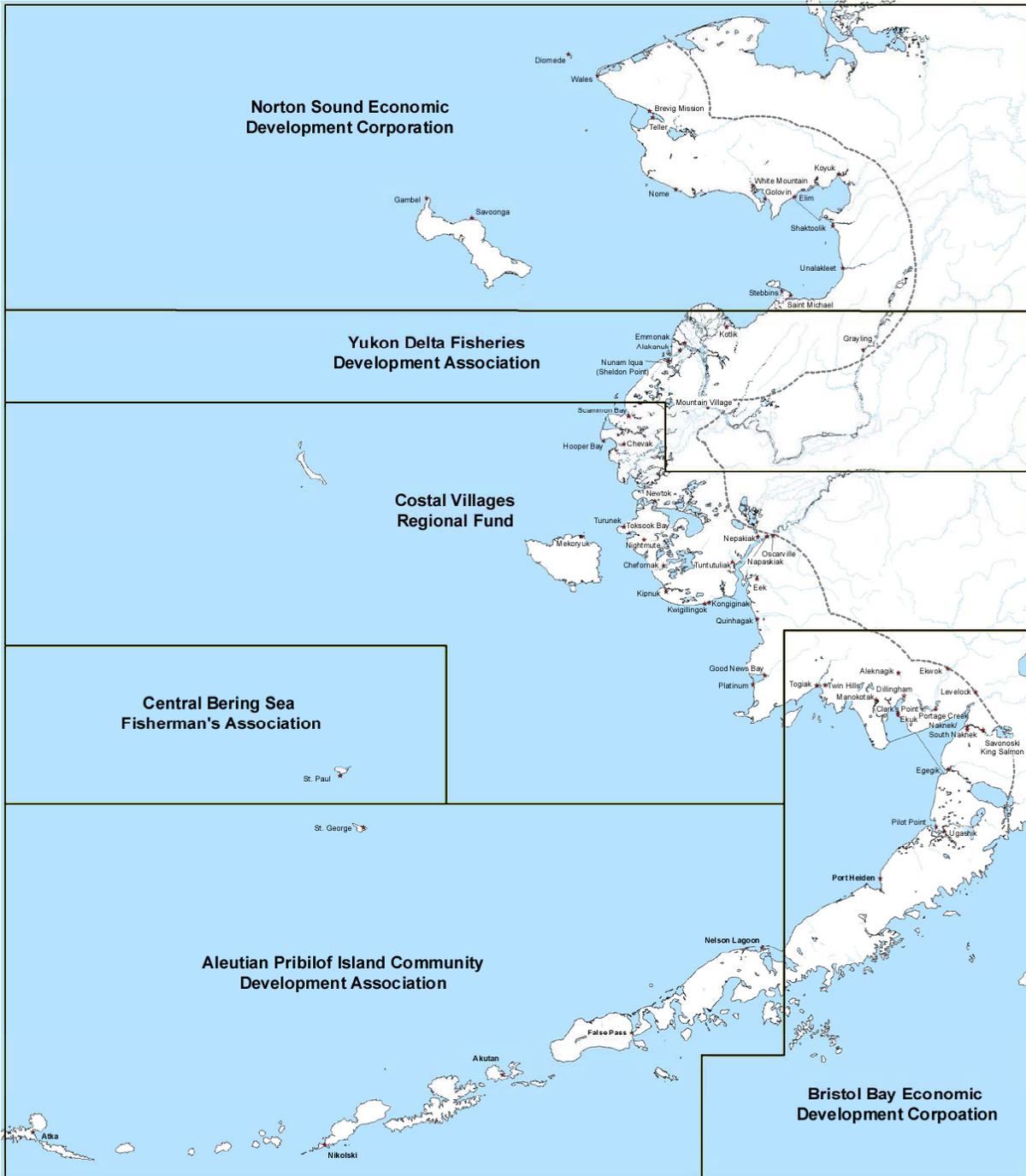
While the CDQ communities border some of the richest fishing grounds in the world, they have largely been unable to exploit this proximity. The full development of the domestic fishing and processing industry in the Bering Sea/Aleutian Islands fisheries occurred relatively quickly between 1976 and 1990. However, the very high capital investment required to compete in these fisheries precluded small communities from participating in their development. The CDQ program serves to ameliorate some of these circumstances by extending an opportunity to qualifying communities to directly benefit from the productive harvest and use of these publicly owned resources.

According to Sec. 305(i)(1)(B) of the Magnuson-Stevens Act, to be eligible to participate in the CDQ program a community shall—

- (i) be located within 50 nautical miles from the baseline from which the breadth of the territorial sea is measured along the Bering Sea coast from the Bering Strait to the western most of the Aleutian Islands, or on an island within the Bering Sea;
- (ii) not be located on the Gulf of Alaska coast of the north Pacific Ocean;
- (iii) meet criteria developed by the Governor of Alaska, approved by the Secretary, and published in the Federal Register;
- (iv) be certified by the Secretary of the Interior pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. 1601 et seq.) to be a Native village;
- (v) consist of residents who conduct more than one-half of their current commercial or subsistence fishing effort in the waters of the Bering Sea or waters surrounding the Aleutian Islands; and
- (vi) not have previously developed harvesting or processing capability sufficient to support substantial participation in the groundfish fisheries in the Bering Sea, unless the community can show that the benefits from an approved Community Development Plan would be the only way for the community to realize a return from previous investments.

Currently, 65 communities are eligible to participate in the CDQ program (Figure 1). The eligible communities have formed six non-profit corporations (CDQ groups) to manage and administer the CDQ allocations, investments, and economic development projects. The six CDQ groups are Aleutian Pribilof Island Community Development Association (APICDA), Bristol Bay Economic Development Corporation (BBEDC), Central Bering Sea Fishermen's Association (CBSFA), Coastal Villages Region Fund (CVRF), Norton Sound Economic Development Corporation (NSEDC), and Yukon Delta Fisheries Development Association (YDFDA).

Figure 1. Location of CDQ Communities and CDQ Groups



Source: National Marine Fisheries Service, <http://www.fakr.noaa.gov/cdq>

The CDQ groups are composed of from one to twenty communities. Table 4 summarizes the CDQ groups in terms of their member communities, the approximate population of these communities, and the groups' office locations. In 2000, the total population of the CDQ communities was estimated to be 27,073. However, this population figure may include a substantial number of individuals who are not year-round residents.

Table 4. CDQ Group Communities, Populations and Administrative Locations, 2002

CDQ Group	Member Communities	2000 Population	Office Locations
APICDA	Akutan Atka False Pass Nelson Lagoon	Nikolski St. George	1,143 ¹ Juneau Unalaska (Staff are also in Homer)
BBEDC	Aleknagik Clark's Point Dillingham Egegik Ekuk Ekwok King Salmon Levelock Manokotak	Naknek Pilot Point Portage Creek Port Heiden South Naknek Togiak Twin Hills Ugashik	5,932 Dillingham Juneau
CBSFA	St. Paul	532	St. Paul
CVRF	Chefornak Chevak Eek Goodnews Bay Hooper Bay Kipnuk Kongiganak Kwigillinook Mekoryuk Napakiak	Napaskiak Newtok Nightmute Oscarville Platinum Quinhagak Scammon Bay Toksook Bay Tuntutuliak Tununak	7,855 Anchorage
NSEDC	Brevig Mission Elim Gambell Golovin Koyuk Little Diomedede Nome St. Michael	Savoonga Shaktoolik Stebbins Teller Unalakleet Wales White Mountain	8,488 Anchorage Unalakleet
YDFDA	Alakanuk Emmonak Grayling	Kotlik Mountain Village Sheldon Point	3,123 Seattle Emmonak Anchorage

¹ The population estimate may include individuals who are not year-round residents.
Source: DCED 2001; U.S. Census Bureau, Census 2000.

2.3 CDQ Group Allocations

Each CDQ group is eligible to receive a percentage allocation of each CDQ or prohibited species catch (PSC) reserve as recommended by the State of Alaska and approved by the U.S. Secretary of Commerce. Under the current regulations, all groundfish and prohibited species caught by vessels fishing for CDQ groups accrue against the CDQ allocations and none of the groundfish or prohibited species caught in the groundfish CDQ fisheries accrue against the non-CDQ apportionment of the TAC or PSC limits. The CDQ groups are required to manage their catch to stay within all of their CDQ allocations.

The CDQ allocations recommended by the State for 2001-2002 are displayed in Table 5. In 2001, these percentages represented approximately 185,000 metric tons of groundfish and over 2,400 metric tons of crab and halibut (Table 6).

Table 5. CDQ Allocation Percentages by Species and CDQ Group, 2001-2002

	CDQ Group Allocation (Percent)						Total
	APICDA	BBEDC	CBSFA	CVRF	NSEDC	YDFDA	
Halibut:							
4B	100	0	0	0	0	0	100
4C	10	0	90	0	0	0	100
4D	0	26	0	24	30	20	100
4E	0	30	0	70	0	0	100
Crab:							
Bristol Bay Red King	18	18	10	18	18	18	100
Norton Sound Red King	0	0	0	0	50	50	100
Pribilof Red & Blue King	0	0	100	0	0	0	100
St. Matthew Blue King	50	12	0	12	14	12	100
Opilio Tanner - BS	10	19	19	17	18	17	100
Bairdi Tanner - BS	10	19	19	17	18	17	100
Sablefish & Turbot:							
Sablefish, Hook & Line - AI	15	20	0	30	20	15	100
Turbot - AI	16	20	5	21	20	18	100
Sablefish, Hook & Line - BS	15	22	18	0	20	25	100
Turbot - BS	20	22	7	15	15	21	100
Sablefish, Trawl - AI	24	23	9	10	10	24	100
Sablefish, Trawl - BS	17	20	10	17	18	18	100
Pacific Cod	16	20	10	17	18	19	100
Pollock:							
BS/AI/Bogoslof	14	21	4	24	23	14	100
Atka mackerel:							
Eastern AI/BS	30	15	8	15	14	18	100
Central AI	30	15	8	15	14	18	100
Western AI	30	15	8	15	14	18	100
Flatfish:							
Yellowfin sole	28	24	8	6	7	27	100
Rocksole	24	23	8	11	11	23	100
Flathead	20	20	10	15	15	20	100
Other Flatfish	25	23	9	10	10	23	100
Other Species	18	20	10	16	16	20	100
Other Rockfish:							
Other Rockfish - BS	25	21	7	12	13	22	100
Other Rockfish - AI	23	17	7	18	17	18	100
Sharp/Northern - AI	30	15	8	15	14	18	100
Short/Rougheye - AI	22	18	7	18	17	18	100
Arrowtooth	24	22	9	11	10	24	100

	CDQ Group Allocation (Percent)						Total
	APICDA	BBEDC	CBSFA	CVRF	NSEDC	YDFDA	
Pacific Ocean Perch Complex:							
True Pacific Ocean Perch - BS	18	21	7	18	18	18	100
Other Pacific Ocean Perch - BS	23	18	8	16	16	19	100
Eastern AI	30	15	8	15	14	18	100
Central AI	30	15	8	15	14	18	100
Western AI	30	15	8	15	14	18	100
Prohibited Species:							
Halibut (MT)	22	22	9	12	12	23	100
Chinook salmon (No.)	15	21	4	23	23	14	100
Other salmon (No.)	15	21	5	23	22	14	100
Opilio Tanner Crab (No.)	24	22	9	11	10	24	100
Bairdi Tanner Crab – Zone 1 (No.)	26	24	8	8	8	26	100
Bairdi Tanner Crab – Zone 2 (No.)	23	22	9	12	11	23	100
Red King Crab (No.)	29	23	8	7	7	26	100

Source: DCED (2001)

Table 6. CDQ Allocation Amounts by Species and CDQ Group, 2001

CDQ Species	2001 TAC	2001 CDQ Allocation	CDQ Group Allocation					
			APICDA	BBEDC	CBSFA	CVRF	NSEDC	YDFDA
(Metric Tons)								
Halibut:								
4B	2,231	446	445					
4C	922	461	46		414			
4D	923	277		72		66	83	55
4E	177	177		53		124		
Crab:								
Opilio Tanner - BS	11,382	854	85	162	162	145	154	145
Bristol Bay Red King	3,743	281	51	51	28	51	51	51
Sablefish:								
Sablefish, Hook & Line - BS	780	156	23	34	28	0	31	39
Sablefish, Hook & Line - AI	1,875	375	56	75	0	113	75	56
Sablefish - BS - Trawl	780	59	10	12	6	10	11	11
Sablefish – AI	625	47	11	11	4	5	5	11
Pollock:								
Pollock - BS	1,400,000	140,000	19,600	29,400	5,600	33,600	32,200	19,600
Pollock - AI	2,000	200	28	42	8	48	46	28
Pollock - Bogoslof	1,000	100	14	21	4	24	23	14
Pacific Cod	188,000	14,100	2,256	2,820	1,410	2,397	2,538	2,679

CDQ Species	2001 TAC	2001 CDQ Allocation	CDQ Group Allocation					
			APICDA	BBEDC	CBSFA	CVRF	NSEDC	YDFDA
(Metric Tons)								
Atka Mackerel:								
Western AI	27,900	2,093	628	314	167	314	293	377
Central AI	33,600	2,520	756	378	202	378	353	454
Eastern AI/BS	7,800	585	176	88	47	88	82	105
Flatfish:								
Yellowfin Sole	113,000	8,475	2,373	2,034	678	509	593	2,288
Rock Sole	75,000	5,625	1,350	1,294	450	619	619	1,294
BS Greenland Turbot	5,628	422	84	93	30	63	63	89
AI Greenland Turbot	2,772	208	33	42	10	44	42	37
Arrowtooth Flounder *	22,011	1,403	337	309	126	154	140	337
Flathead Sole	40,000	3,000	600	600	300	450	450	600
Other Flatfish	28,000	2,100	525	483	189	210	210	483
Pacific Ocean Perch Complex:								
BS	1,730	130	23	27	9	23	23	23
Western AI	4,740	356	107	53	28	53	50	64
Central AI	2,560	192	58	29	15	29	27	35
Eastern AI	2,900	218	65	33	17	33	31	39
Other Rockfish:								
Other Red Rockfish - BS	135	10	2	2	1	2	2	2
Other Rockfish - BS	361	27	7	6	2	3	4	6
Other Rockfish - AI	676	51	12	9	4	9	9	9
Sharpchin/Northern - AI	6,745	506	152	76	40	76	71	91
Shortraker/Rougheye - AI	912	68	15	12	5	12	12	12
Other Species*	26,500	1,689	304	338	169	270	270	338
Prohibited Species:								
Zone 1 Red King Crab (No.)	97,000	7,275	2,110	1,673	582	509	509	1,892
Zone 1 Bairdi Tanner Crab (No.)	730,000	54,750	14,235	13,140	4,380	4,380	4,380	14,235
Zone 2 Bairdi Tanner Crab (No.)	2,070,000	155,250	35,708	34,155	13,973	18,630	17,078	35,708
Opilio Tanner Crab (No.)	4,350,000	326,250	78,300	71,775	29,363	35,888	32,625	78,300
Pacific Halibut (MT)	4,575	343	75	75	31	41	41	79
Chinook Salmon (No.)	41,000	3,075	461	646	123	707	707	431
Non-Chinook Salmon (No.)	42,000	3,150	473	662	158	725	693	441

Source: DCED, 2001.

*15 percent of allocation placed in nonspecific reserve.

2.4 CDQ Group Profiles²

The 65 communities in the CDQ program are geographically dispersed and extend westward to Atka on the Aleutian Chain, through Bristol Bay, the Yukon and Kuskokwim River basins, and northward along the Bering Straits to the island of Diomedea. Each region has separate historical, culture and political subdivisions with distinct economic needs and fisheries opportunities within each community. CDQ groups are coalitions of communities formed principally along historical demographic boundaries. Since the program began in 1992, CDQ groups have evolved into organizations with differing business philosophies and business strategies. CDQ groups have focused on building their business portfolios through Bering Sea industry acquisitions in the major fishery sectors, while providing residents with employment, education, training and other fisheries-related programs.

The State of Alaska and National Marine Fisheries Service approve community development plans submitted by CDQ groups that include a detailed description of how royalty payments from CDQ allocations will provide benefits to eligible CDQ communities. Federal program regulations require that CDQ investments must be fisheries related. However, in June 2002, the North Pacific Fishery Management Council approved a widespread policy change to the CDQ program that, among other changes, will allow CDQ groups to spend up to 20 percent of annual pollock royalties on non-fisheries projects. This policy represents a significant departure from the Council's original mission statement in 1992, which required the CDQ program to focus strictly on developing fisheries-related economies in western Alaska. The National Marine Fisheries Service is targeting 2003 for implementation of the new regulations.

With the exception of halibut, all CDQ groups have partnered with existing groundfishing companies to harvest the various species of CDQ quota. As of 2002, all six CDQ groups had acquired equity ownership positions in their industry partners, including pollock, Pacific cod, crab and other groundfish species.

The following CDQ group profiles are adapted with excerpts taken from 2003-2005 CDP applications. Detailed information regarding the organizational structure, goals, quota share, harvesting/processing partners, employment, training/scholarship programs and investment and development programs for each group is provided in a report compiled by Northern Economics, Inc. (January 2001).

2.4.1 Aleutian Pribilof Island Community Development Association (APICDA)

APICDA has six communities, which are relatively small in population and located in the Aleutian Islands and Pribilof Islands. Unalaska is the largest community in the Aleutian Islands and is the regional center for the Bering Sea fishery industry. Although not a CDQ community, Unalaska is represented on the APICDA board of directors by an ex-officio seat and community members receive education and training benefits from APICDA.

APICDA has focused on working with its communities to provide local docks, harbors, storage facilities, charter boats, and other fisheries-related infrastructure to promote the development of near-shore halibut, Pacific cod and salmon fisheries. Most APICDA residents have historically been small boat fishermen with little or no history working in seafood-processing jobs in the Bering Sea groundfishing industry.

² Updated 2002.

The largest source of regional CDQ employment is the Atka Pride Seafood's plant in Atka, jointly owned by the community fishermen association and APICDA. Other APICDA facilities include the Bering Pacific Seafoods plant in False Pass and a sport-fishing lodge in Nikolski that began operating in 2002. APICDA plans to conduct analysis to determine whether seafood-processing facilities in Nelson Lagoon and St. George are economically feasible. Employment statistics show APICDA among the highest of the six CDQ groups in percentage of local residents employed in CDQ-related jobs. Through 2001, APICDA has provided an average of 135 annual jobs and has generated over \$11 million in wages paid directly to residents of APICDA communities. APICDA is based out of Juneau and has regional offices in Homer and Unalaska.

2.4.2 Bristol Bay Economic Development Corporation (BBEDC)

BBEDC represents 17 villages around the coastline of Bristol Bay, including Dillingham, the second-largest community in the CDQ program with 2,400 residents. BBEDC is one of two CDQ groups headquartered in-region.

In the early stages of the CDQ program, BBEDC focused its community development efforts largely on creating seafood employment opportunities with its groundfish industry partners. Since 1992, the group has employed more CDQ residents in pollock-related jobs than any other group. In recent years, however, the organization has shifted its emphasis towards creating regional opportunities by making BBEDC venture capital and matching funds more accessible to BBEDC communities. BBEDC has worked with local fishermen to develop a Bristol Bay halibut fishery. BBEDC is also exploring community and industry partnerships to create better marketing and distribution opportunities for Bristol Bay salmon fishermen.

In 2001, BBEDC commissioned a multi-disciplinary team to examine comprehensive alternatives for restructuring the declining salmon fisheries. The Bristol Bay Salmon Fishery Restructuring Study is directed towards to assist both regional and statewide policy makers. The completion date is January 2003.

BBEDC has purchased ownership in nearly every CDQ fishery, including pollock investments in onshore and offshore companies, a Pacific cod longliner, and four crab catcher vessels. The group has active vocational training and internship programs with its offshore partners, and provides internship opportunities with out-of-region and local businesses to develop administrative and other specialized skills. BBEDC is working to promote workforce readiness skills through cooperative programs with school districts in the Bristol Bay region. BBEDC continues to have success with its permit brokerage program established to stem the outflow of limited entry permits from the region. In 2001, BBEDC formed a non-profit science and research institute to promote scientific research in the Bristol Bay region.

2.4.3 Central Bering Sea Fisherman's Association (CBSFA)

CBSFA represents the community of Saint Paul and is the only single-community group in the CDQ program. Saint Paul is strategically located near the harvesting area of the Bering Sea crab and Pacific cod fleet. CBSFA has worked with other local organizations to expand and upgrade the Saint Paul Harbor to capitalize on the proximity by providing support services to the industry. CBSFA had a significant presence in the crab rationalization debate at the North Pacific Fishery Management Council. If Congress accepts the plan, CBSFA will have access to a steady source of crab quota sufficient to construct a long-planned multi-processing facility in Saint Paul.

In 2002, CBSFA acquired a 60-ton crane, a new floating dock access ramp, and a new hydraulic trailer to service the expanding small-boat halibut fleet. In 2001, CBSFA formed a halibut cooperative to organize Saint Paul fishermen, provide higher ex-vessel prices, and provide better markets for locally harvested halibut. The group also administers a revolving loan program to provide boat and gear loans to Saint Paul fishermen.

Saint Paul residents historically have preferred fishing in local fisheries and have not desired seafood-processing jobs outside the community. CBSFA has equity ownership in two crab vessels that have not proven to be successful investments. CBSFA's most lucrative investment has been a small ownership stake in American Seafoods, their pollock-harvesting partner since 1992. In 2001-2002, CBSFA received four percent of the CDQ pollock quota.

2.4.4 Coastal Villages Region Fund

CVRF's twenty villages extend from Platinum and Kipnuk along the coastline and inland to the Kuskokwim River communities of Napakiak and Napaskiak. CVRF has the most communities in the program and the largest village population. The surrounding regional center is Bethel, a non-CDQ community. The greater Yukon-Kuskokwim region has the highest levels of unemployment in Alaska.

In 2002, CVRF increased its ownership in American Seafoods, its industry partner and the largest offshore pollock harvester in the Bering Sea, from approximately 20 percent to nearly 40 percent. The equity holding is the largest in the CDQ program.

CVRF has formed quality and marketing initiatives to develop a regional identity for Kuskokwim Bay salmon. The regional economy is centered on small-boat fishermen who participate in local herring, salmon and halibut fisheries. CVRF has geared many of its in-region programs towards developing local fisheries, including the construction of halibut-buying stations in several villages. In 2000 and 2001, all halibut harvested in the region was delivered to CVRF plants in Cheforak, Mekoryuk, Quinhagak, Toksook Bay and Tununak. In 2002, two new plants were constructed in Hooper Bay and Kipnuk. CVRF also owns and operates a salmon processing facility in Quinhagak, which provides seasonal employment to several hundred residents and is the only salmon processing facility and buyer in the Kuskokwim region. CVRF has a loan program to assist fishermen in obtaining gear and to purchase halibut and sablefish quota. Other CVRF services include the providing of affordable marine insurance and tax assistance to fishermen. CVRF also continues to work with Seattle-based herring buyers to ensure that CVRF fishermen have a herring market each year. CVRF has partnered with the community of Quinhagak to own and successfully operate a sport fishing facility on the Arolik River.

In 1995, CVRF implemented the 4-Site program to provide an integrated systems approach to human resource opportunities in the areas of scholarships, internships, training and employment. The program has grown to include other support services such as drug screening, Junior Achievement, Youth Leadership, Rural Education Adult Development and Skills for Success.

2.4.5 Norton Sound Economic Development Corporation (NSED)

NSED represents fifteen villages from the southern community of St. Michael to the northernmost CDQ community of Diomede. NSED has the largest overall population in the CDQ program at nearly nine thousand residents, which includes the regional hub of Nome.

NSED has pursued a balance between developing regional economic programs in the Bering Straits region and buying into groundfishing companies in the Bering Sea and Aleutian Islands. In 1998, the group purchased 50 percent of its offshore processor partner, Glacier Fish Company, including two catcher/processors, and a seafood-marketing subsidiary, which operates a longline vessel that

together, employs a significant numbers of NSEDC residents. The group also owns and operates two vessels designed to tender salmon and crab in the Norton Sound Region. In 2002, NSEDC purchased 50 percent interest in a subsidiary company with three crab vessels that harvest primarily brown king crab. NSEDC plans to use the vessels to expand into other CDQ crab fisheries.

NSEDC owns and operates a newly constructed seafood-processing facility in Nome. The plant, which began operating in 2002, is designed to process halibut and crab, species that are harvested by NSEDC fishermen. NSEDC has provided loans for local fishermen to buy vessels and gear to harvest Norton Sound King Crab, halibut and Norton Sound herring. NSEDC has also made significant contributions to the expansion and upgrade of the Nome harbor, which will provide regional benefits by allowing larger vessels to use the harbor as a staging area to transport fuel and freight to outlying Bering Strait communities.

In 1992, in cooperation with Alaska Department of Fish & Game, NSEDC established a region-wide salmon rehabilitation and enhancement program for the Bering Strait region. More recently, NSEDC has initiated scientific research projects in an effort to seek out the underlying reasons for the disastrous decline in local Norton Sound salmon stocks.

NSEDC has a strong employment and training program that provides employment and training opportunities through its pollock industry partner Glacier Fish Company and also locally with the Nome Seafood Center, Unalakleet processing facility, NSEDC tender vessels, and elsewhere. NSEDC continues to expand its training and scholarship opportunities to provide benefits to non-CDQ residents.

2.4.6 Yukon Delta Fisheries Development Association (YDFDA)

YDFDA represents six communities located in the vicinity of the lower Yukon River. According to the 2000 Census, the Yukon Delta region has the highest per capita of adults under the age of twenty in the United States. The region has among the highest percentage of unemployed and economically impoverished residents in Alaska.

YDFDA's core focus has been to involve its regional local fishermen in Bering Sea fisheries. Originally, this was done through a fleet of 32-foot vessels. However, after encountering unprofitable operations and marginal job opportunities, YDFDA turned its attention towards investing in larger Bering Sea groundfishing companies. In 2001, YDFDA purchased a minority equity stake in its pollock industry partner, Golden Alaska and majority ownership in the pollock catcher vessels American Beauty and Ocean Leader. In 2002, YDFDA purchased a 41% ownership in the catcher processor Baranof.

YDFDA has been extremely successful in recruiting and placing Yukon Delta residents in Bering Sea seafood processing jobs. Since 1992, YDFDA has placed 1,166 CDQ and non-CDQ residents into fisheries related jobs. The group has also provided training to 282 Yukon Delta residents in vocational and fishing industry-related programs, with at least half of the trainees returning to acquire more training. YDFDA's scholarship program has been expanded to include CDQ and non-CDQ villages in the Lower Yukon and Iditarod School districts.

YDFDA plans on purchasing a major fish buying and barge operation in the lower Yukon, and to integrate the Emmonak value-added plant and a fish buying station in Kotlik into the operation.

3 Economic Benefits of the CDQ Program

In this section the socioeconomic impacts of the CDQ program on western Alaska communities are assessed using the following parameters: revenue generation, royalties, asset accumulation, employment and income, training and education, infrastructure and support services, indirect employment and income effects and subsistence benefits.

3.1 Revenue Generation

Table 7 shows historic consolidated revenues, expenses, and net income of the CDQ program. The total net income generated by the program from 1992 through 2001 was \$164,571,807. Initially, program revenues were from royalties obtained from sale of quota species. Between 1992 and 2000, approximately \$198 million were generated from these royalty payments. Eventually, revenues were obtained from other sources such as investments and other business activities. Revenues minus royalty income for the program, 1992 through 2000, were equal to nearly \$68 million.

Table 7. CDQ Group Revenues, Expenses and Net Income, 1992-2001

Year	Revenues (\$)	Expenses (\$)	Net Income (\$)
1992	15,111,279	1,457,613	13,653,666
1993	16,769,111	6,621,901	10,147,210
1994	17,407,737	10,691,194	6,716,543
1995	20,875,303	12,990,843	7,884,460
1996	25,338,309	13,538,905	11,799,404
1997	26,525,363	18,178,704	8,346,659
1998	33,790,281	20,205,002	13,585,279
1999	54,416,340	25,423,910	28,992,430
2000	57,841,998	32,279,749	22,462,249
2001	76,969,050	35,985,234	40,983,816
Total	345,044,771	177,372,964	164,571,807

Source: CDQ Program Office, Alaska Department of Community and Economic Development.

3.1.1 Royalties

To be eligible to participate in the CDQ program, CDQ communities could have no previously developed harvesting processing capability sufficient to support substantial groundfishing fisheries participation in the Bearing Sea Aleutian Island fisheries. Therefore, it has been necessary (with the exception of some of the halibut CDQs) for each CDQ group to enter into a relationship with one or more of the large corporations that participate in the fishery. CDQ groups have formed partnerships with Seattle-based fishing and processing companies, who pay CDQ groups royalties for the right to catch and process their share of the allocation. The nature of these relationships differs from group to group. In addition to receiving royalty payments on apportioned catch shares, CDQ groups negotiate agreements that provide for training and employment of CDQ community members within the partners' fishing operations, as well as other community development benefits. Each of the six groups negotiates a specific price per metric ton or a base price plus some form of profit sharing for the CDQ quota.

Based upon reports of consistently high bid-prices for CDQ quota (see, for example, testimony before the NPFMC on the impacts of Inshore/Offshore III on the pollock CDQ program), the partnering companies also apparently receive substantial benefits from these CDQ relationships. These benefits include preferred access to the resource, resulting in better yields and more valuable product forms (e.g., roe), and the more efficient use of capacity. The positive relationship between CDQ groups and industry partners of the CDQ pollock fishery probably contributed to the successful implementation of the offshore cooperative management system created by the 1999 American Fisheries Act.

Over the duration of the CDQ program, annual pollock CDQ royalties have consistently exceeded \$13 million (Table 8). Royalty income rose substantially after 1998 because both the TAC and lease price of pollock CDQ shares increased. Stronger overseas markets for Pollack roe products and a shift by processors to higher value products were among the reasons for the increase in CDQ quota values. In 2000, the CDQ groups received nearly \$33 million in pollock CDQ royalties.

Table 8. CDQ Group Royalty Income, 1992-2001.

Year	Pollock Royalties (\$)	Other Royalties (\$)	Total Royalties (\$)
1992	13,155,794	0	13,155,794
1993	16,041,158	0	16,041,158
1994	14,276,105	0	14,276,105
1995	15,000,575	58,528	15,059,103
1996	18,932,718	90,661	19,023,379
1997	19,204,435	517,981	19,722,416
1998	21,775,005	2,984,267	24,759,272
1999	25,918,992	9,676,810	35,595,802
2000	32,996,456	7,405,699	40,402,155
2001	36,721,924	5,837,017	42,558,941
Total	214,023,162	26,570,963	240,594,125

Source: CDQ Program Office, Alaska Department of Community and Economic Development.

Royalties from the multi-species program provided an additional \$7.4 million to the CDQ groups in 2000. The percentage of the total 2000 royalties generated by each non-pollock species are as follows: Pacific cod – 8 percent; opilio crab – 5 percent; Bristol Bay red king crab – 3 percent; and other species, including sablefish, Atka mackerel, halibut and turbot – 2 percent.

3.1.2 Asset Accumulation

Revenue streams from CDQ allocations have generated assets and savings for CDQ groups, which provide important capital for making investments. It is one empirical measure of the performance of the program. Amassing equity interest in real assets represents a clear community development strategy. Data suggest that CDQ groups, when taken as a whole, have retained almost half of their gross revenues in some form of equity, whether vessel ownership, processing facilities, marketable securities, loan portfolios, and IFQ holdings.

Table 9 outlines the combined annual balance sheets for the six CDQ groups. The value of CDQ group assets in aggregate increased from nearly \$15 million in 1992 to over \$152 million in 2000. Both assets and reserves have increased about tenfold over the nine years of the program documented here, while liabilities have shown considerable fluctuation. Liability growth in 2000 is

due to a recent large increase in investments (also evident in the 2000 asset column) that carry an element of debt to them.

Table 9. CDQ Group Balance Sheet, 1992-2001.

Year	Assets (\$)	Liabilities (\$)	Net Assets (\$)
1992	13,353,826	655,989	12,697,837
1993	23,682,750	324,885	23,357,865
1994	31,509,301	1,443,762	30,065,539
1995	40,306,850	2,362,755	37,944,095
1996	51,436,987	1,580,963	49,856,024
1997	63,098,538	2,888,088	60,210,450
1998	76,790,817	2,995,088	73,795,729
1999	111,385,274	7,600,766	103,784,508
2000	153,782,320	21,538,154	132,244,166
2001	190,280,972	19,240,885	171,040,087
Total	755,627,635	60,631,335	694,996,300

Source: CDQ Program Office, DCED.

Another benefit of capital asset acquisitions and venturing with industry partners is the enhanced control communities may exercise over the joint economic activity. As members in fishing companies with ownership interest, the CDQ groups are better able to take part in decisions that directly impact business operations and, thus, profitability. In addition, the opportunity for technology transfer and hands-on experience (whether operational or managerial) occurs from the industry partner to the CDQ group. CDQ groups and their residents are able to learn first hand how the industry functions. This increases the likelihood of local control as CDQ residents, who have spent time learning from established industry partners, may one day be in control of their own operations and be able to operate independent of the CDQ program. In the interim, expanded employment opportunities, made available through vessel acquisition and partnering with established industry members, increase the sharing of benefits that accrue from the CDQ activities.

3.1.2.1 Investments in the Harvesting and Processing Sectors

Increasingly, CDQ groups are using their CDQs to leverage capital investment in Bering Sea groundfishing companies. Acquisition of ownership interest in commercial fishing operations and other fisheries-related enterprises is one important means of directly adding to a CDQ group's economic sustainability, consistent with the program's mandate. Equity acquisitions in vessels as of 2001 are presented in Table 10.

Table 10. Fishing Vessel Acquisitions by CDQ Groups through 2001

CDQ Group	Vessel Acquisitions (percent ownership in parentheses)
APICDA	<ul style="list-style-type: none"> ▪ Starbound (20%) 240' trawl catcher processor harvesting pollock ▪ Bering Prowler (20%) 124' longline catcher processor harvesting Pacific cod and sablefish ▪ Prowler (20%) 114' longline catcher processor harvesting Pacific cod and sablefish ▪ Golden Dawn (25%) 148' trawl catcher vessel harvesting Pacific cod, pollock and crab ▪ Ocean Prowler (20%) 155' longline catcher processor harvesting Pacific cod and sablefish ▪ Farwest Leader (25%) 105' pot catcher vessel harvesting crab and Pacific cod ▪ Stardust (100%) 56' longline catcher vessel harvesting Pacific cod and halibut ▪ Bonanza (100%) 38' longline catcher vessel harvesting halibut ▪ AP#1, AP#2, AP#3 (100%) 36' longline catcher vessels harvesting halibut and Pacific cod ▪ AP#4, AP#5 (100%) 35.5' longline catcher vessels harvesting halibut and Pacific cod ▪ Konrad 1 (75%) 58' trawl/pot catcher vessel harvesting Pacific cod and pollock and serving as a salmon tender ▪ Nikka D (100%) 28' catcher vessel harvesting halibut ▪ Agusta D (100%) 28' sportfishing charter vessel ▪ Grand Aleutian (100%) 32' sportfishing charter vessel
BBEDC	<ul style="list-style-type: none"> ▪ Arctic Fjord (30%) 270' trawl catcher processor harvesting pollock ▪ Bristol Leader (50%) 167' longline catcher processor harvesting Pacific cod, halibut and sablefish ▪ Neahkahnne (30%) 110' trawl catcher processor harvesting pollock ▪ Northern Mariner (45%) pot catcher vessel harvesting crab ▪ Bristol Mariner (45%) 125' pot catcher vessel harvesting crab ▪ Nordic Mariner (45%) 121' pot catcher vessel harvesting crab ▪ Cascade Mariner (40%) 100' pot catcher vessel harvesting crab ▪ Dona Martita (50%) 167' pollock trawler ▪ Morningstar (50%) 59' pollock trawler
CBSFA	<ul style="list-style-type: none"> ▪ American Seafoods, LP (3%) which owns the following 270-340' trawl catcher processors harvesting pollock, Pacific cod, yellowfin sole and rock sole: American Dynasty, Katie Ann, Northern Eagle, Ocean Rover, Northern Jaeger, American Triumph and Northern Hawk ▪ Zolotoi (20%) 98' pot catcher vessel harvesting crab ▪ Ocean Cape (35%) 98' pot catcher vessel harvesting crab
CVRF	<ul style="list-style-type: none"> ▪ American Seafoods, LP (39%) which owns the following 270-340' trawl catcher processors harvesting pollock, Pacific cod, yellowfin sole and rock sole: American Dynasty, Katie Ann, Northern Eagle, Ocean Rover, Northern Jaeger, American Triumph and Northern Hawk ▪ Ocean Prowler (20%) 155' longline catcher processor harvesting Pacific cod and sablefish ▪ Ocean Harvester (45%) 58' longline catcher vessel harvesting halibut and Pacific cod ▪ Silver Spray (50%) 116' pot catcher processor harvesting crab and Pacific cod
NSEDC	<ul style="list-style-type: none"> ▪ Glacier Fish Company (50%) which owns the following 201-276' trawl catcher processors harvesting pollock and Pacific cod: Northern Glacier and Pacific Glacier ▪ Norton Sound (49%) 139' longline catcher processor ▪ Golovin Bay (100%) tender vessel ▪ Norton Bay (100%) tender vessel ▪ Ocean Olympic (50%) 155' crab catcher vessel ▪ Alaskan Beauty (50%) 105' crab catcher vessel ▪ North Pacific (50%) 85' crab catcher vessel ▪ Glacier Bay (50%) 154' Pcod longliner vessel

CDQ Group	Vessel Acquisitions (percent ownership in parentheses)
YDFDA	<ul style="list-style-type: none"> ▪ Emmonak Leader (75%) 103' trawl catcher vessel harvesting pollock ▪ Alakanuk Beauty (75%) 105' trawl catcher vessel harvesting pollock ▪ Golden Alaska (19.6%) 308' mothership ▪ Blue Dolphin (100%) 47' longline/pot catcher vessel ▪ Lisa Marie (100%) 78' trawl/pot/longline catcher vessel ▪ Baranof (41%) 182' crab/cod catcher processor

Source: DCED (2002).

As shown in Table 10, all six CDQ groups have acquired ownership interests in the offshore pollock-processing sector. In addition, APICDA and NSEDC have invested in inshore seafood processing plants (Table 11). These inshore plants include both shorebased and floating processing facilities.

Table 11. Inshore Processing Plant Acquisitions by CDQ groups, 2002

CDQ Group	Inshore Plant Acquisitions (percent ownership in parentheses)
APICDA	<ul style="list-style-type: none"> ▪ Atka Pride Seafoods, Inc. (100%) processes halibut ▪ Bering Pacific Seafoods (50%) processes Pacific cod, salmon and other species
NSEDC	<ul style="list-style-type: none"> ▪ Norton Sound Seafood Products (100%) processes salmon, crab, and halibut
CVRF	<ul style="list-style-type: none"> ▪ Coastal Villages Seafoods (100%) processes halibut and salmon

Source: DCED, 2002.

CDQ groups are minority owners in most of the processing groups in which they have invested. The revenues derived from these investments are substantial. An overview of the relative economic importance of investments in the offshore and inshore groundfish processing sector may be acquired by examining the historical quantity and value of groundfish processed by catcher processors and inshore plants in which CDQ groups currently have an equity interest (Table 12 and Table 13). As noted above, one of the most important contributions that CDQ groups bring into investments in the offshore groundfish processing sector is quota. Table 12 and Table 13 show that CDQ catch accounts for about one-fifth of the total amount and value of groundfish processed by the companies in which the groups have invested. Viewed in another way, CDQ groups have used their quota allocations to acquire access to a substantial amount of non-CDQ groundfish through their equity investments. The CDQ and non-CDQ groundfish processed by these enterprises accounted for about 14 percent of the total tonnage and 15 percent of the total wholesale value of groundfish processed in the Alaska fishery in 1999 and 2000. Overall, it is estimated that the ownership shares of CDQ groups represents approximately 27 percent of the total groundfish gross revenues of these enterprises based on a weighted average of wholesale product revenue.

Table 12. Quantity of Groundfish Processed by Catcher Processor Vessels and Inshore Plants in which CDQ Groups Currently Have an Equity Interest, 1999 and 2000

Year	Source of Harvests ¹	Atka							Total
		Mackerel	Flatfish	Rock Fish	Other	Pacific Cod	Pollock	Sablefish	
1999	Non-CDQ (1,000 MT)	0.00	10.46	0.09	2.63	18.79	211.14	0.33	243.45
	CDQ (1,000 MT)	0.00	0.52	0.03	0.86	5.42	66.55	0.05	73.43
	CDQ Tons as % of Total	15.4	4.7	23.0	24.6	22.4	24.0	13.8	23.2
2000	Non-CDQ (1,000 MT)	0.00	11.80	0.09	4.14	15.44	240.57	0.26	272.31
	CDQ (1,000 MT)	0.01	0.85	0.03	2.09	8.22	91.78	0.05	103.02
	CDQ Tons as % of Total	98.8	6.7	22.8	33.5	34.7	27.6	16.1	27.4

¹ CDQ harvest refers to fish allocated under the CDQ program. Non-CDQ harvest refers to fish that were not part of a CDQ group allocation.

Source: NMFS Blend Data, June 2001; DCED (2001)

Table 13. Wholesale Product Value of Groundfish Processed by Catcher Processor Vessels and Inshore Plants in which CDQ Groups Currently Have an Equity Interest, 1999 and 2000

Year	Source of Harvests ¹	Atka				Pacific			Total
		Mackerel	Flatfish	Rock Fish	Other	Cod	Pollock	Sablefish	
1999	Non-CDQ (\$Millions)	0.00	2.16	0.09	0.03	19.99	161.10	1.45	184.82
	CDQ (\$Millions)	0.00	0.17	0.01	0.04	6.15	50.46	0.23	57.06
	CDQ Value as % of Total	0.0	7.3	11.5	58.9	23.5	23.9	13.5	23.6
2000	Non-CDQ (\$Millions)	0.00	2.20	0.10	0.07	17.77	192.91	1.19	214.25
	CDQ (\$Millions)	0.00	0.21	0.01	0.01	9.66	73.64	0.23	83.77
	CDQ Value as % of Total	77.1	8.8	9.0	17.4	35.2	27.6	16.4	28.1

¹ CDQ harvest refers to fish allocated under the CDQ program. Non-CDQ harvest refers to fish that were not part of a CDQ group allocation.

Source: NMFS Blend Data, June 2001; DCED (2001)

The vessel list in Table 10 shows that CDQ groups have also invested in groundfish catcher vessels. An overview of the relative economic importance of groundfish caught by catcher vessels in which CDQ groups have an equity interest (Table 14). The groundfish harvested by these fishing operations accounted for about two percent of the total tonnage and three percent of the total ex-vessel value of groundfish harvested in the Alaska fishery in 1999 and 2000. Overall, it is estimated that the ownership shares of CDQ groups represents approximately 50 percent of the total groundfish gross revenues of these enterprises based on a weighted average of ex-vessel revenue.

Table 14. Quantity and Ex-Vessel Value of Groundfish Harvested by Catcher Vessels in which CDQ Groups Currently Have an Equity Interest, 1999 and 2000

Year	Atka Mackerel	Flatfish	Rock Fish	Other	Pacific Cod	Pollock	Sablefish	Total
Retained Tons (Thousands)								
1999	0.04	0.04	0.01	0.00	2.17	30.13	0.14	32.54
2000	0.00	0.03	0.01	0.01	2.04	30.97	0.11	33.16
Ex-vessel Value (\$Millions)								
1999	0.00	0.02	0.02	0.00	1.14	5.84	0.57	7.59
2000	0.00	0.01	0.01	0.00	1.34	7.18	0.55	9.09

Source: NMFS Blend Data and Weekly Reports, June 2001; DCED (2001).

Finally, the vessel list in Table 10 also shows that CDQ groups have made substantial investments in catcher vessels and catcher processors harvesting crab in the BSAI area. Overall, it is estimated that the ownership shares of CDQ groups represents approximately 50 percent of the total crab gross revenues of these enterprises based on a weighted average of ex-vessel value. The total gross revenues earned by the crab vessels in which CDQ groups have an equity interest amounted to \$2,755,103 in 2000 and \$4,289,038 in 2001. The crab harvested by these fishing operations accounted for about two percent of the total ex-vessel value of crab harvested in the BSAI fisheries in 2000.

The ability of CDQ groups to leverage their CDQ allocations into ownership positions has significantly increased the earning potential of the CDQ groups. As noted above, the increased ownership positions have enabled CDQ groups to access Alaska’s offshore fishery resources. This additional earning potential raises important questions regarding the reporting requirements for CDQ groups. Of particular importance is whether CDQ groups should report to the state and NMFS the income and employment they generate from fishing and processing activities that utilize non-CDQ apportionments. The answer to this question is a policy issue, but one which has important implications for deriving realistic and comprehensive estimates of earnings from fishing and processing.

A number of CDQ groups have also promoted investment in local, small-scale fishing operations targeting salmon, herring, halibut or other species. Activities include funding permit brokerage services to assist with retention of limited entry salmon permits in CDQ communities, capitalizing revolving loan programs to provide financing to resident fishermen for the purchase of boats and gear and supporting market development for locally-harvested seafood products. Investments in the infrastructure projects discussed in the following section (3.2) also support local fishing enterprises in CDQ communities. The number of commercial fishing permits held by residents of CDQ communities has increased slightly over the years, from 319 in 1991 to 328 in 2000. Further evaluation of the economic effects of efforts to promote small-boat fisheries is constrained by the limited reporting of these activities in the community development plans and annual and quarterly reports submitted by the CDQ groups which are posted on the state’s web page.

3.2 Infrastructure and Support Services

The CDQ groups have channeled significant resources toward fisheries-related infrastructure development. This infrastructure has the potential to support growth in the fisheries sectors of the economies of individual CDQ communities. Table 15 provides a listing of the major investments in infrastructure projects and support services.

Table 15. Selected Infrastructure Projects and Support Service Sponsored by CDQ Groups, 1992-2000

CDQ Group	Selected Infrastructure Projects and Support Services
APICDA	<ul style="list-style-type: none"> ▪ Contributed to extension of water and sewer to the new False Pass City Dock ▪ Contributed to False Pass Tribal Council for construction of a gear storage warehouse at False Pass ▪ Completed construction of a new dock in Nelson Lagoon in conjunction with the Aleutians East Borough ▪ Contributed funds for dredging in the Zapadni Bay Harbor at St. George ▪ Constructed a dock at Atka ▪ Partnered with St. George Fishermen's Association to form Kayux Development LLC to develop a \$1.7 million harbor on St. George ▪ Joined with the Nelson Lagoon Tribal Council to form the Nelson Lagoon Storage Company, a gear storage facility ▪ Constructed a boat ramp at Nikolski
BBEDC	<ul style="list-style-type: none"> ▪ Contracted the Alaska Business Development Center to assist with regional business and infrastructure development projects ▪ Purchased ice machines for eight communities in the BBEDC region ▪ Established a fisheries infrastructure development matching fund to match state and federal monies for approved capital projects
CBSFA	<ul style="list-style-type: none"> ▪ Provided CDQ funds to match state funding for the dredging of St. Paul Harbor ▪ Managed a temporary docking facility for the local halibut fleet ▪ Promoted development of small boat harbor with Army Corps of Engineers
CVRF	<ul style="list-style-type: none"> ▪ Established local halibut buying and processing operations in the Nelson Island/Nunivak Island area. ▪ Awarded a grant to the City of Toksook Bay to help its fish processing plant meet ADEC requirements ▪ Provided operating loans and investment capital to Tununak Fish Products and to Toksook Bay halibut buying operations ▪ Completed a supply building to support the halibut buying station at Mekoryuk ▪ Made loans to two new aluminum welding businesses for boat repair and building at Eek and Hooper Bay ▪ Expanded existing halibut buying operations at Chefornek and Quinhagak ▪ Entered into a fish quality control program with the local Alaska Regional Development Organization
NSEDC	<ul style="list-style-type: none"> ▪ Provided funding for Nome seafood center, floating dock project, waterfront crane and inner boat harbor sheet piling project, and Nome port ▪ Organized salmon and herring buying/processing operations ▪ Provided funding for construction of a fish plant in Unalakleet ▪ Funded several projects in salmon rehabilitation and enhancement program
YDFDA	<ul style="list-style-type: none"> ▪ Authorized loan to Yukon Delta Fish Marketing Coop to renovate existing salmon plant to a multi-species, value-added, freezing and processing facility ▪ Assisted in developing small businesses that provide services for local fisheries ▪ Provided funding to the Emmonak Tribal Council's fish plant.

Source: Northern Economics, Inc. (January 2001).

The capital construction projects associated with infrastructure development create a substantial number of jobs. These jobs account for a large proportion of the "other employment" listed in Table 17. The strong increase in this category reflects increased investment in fishing-related infrastructure within the regions represented by CDQ groups.

3.3 Training and Education

Training of CDQ community residents has been a primary objective for CDQ groups from the outset of the program and has been promoted as an essential means to developing a sustainable, locally based fishery economy. Each CDQ group provides training for their residents, based not only upon the individual needs of the trainee, but upon the overall needs of the community.

Table 16 presents results of the various scholarship and training programs undertaken by the six CDQ groups. Over 7,000 people have been trained over the life of the CDQ program (there may be some double counting, as an individual person can take advantage of more than one training opportunity). CDQ groups spent approximately \$9.3 million on training from 1993 through 2000, for an average expenditure of about \$1,350 per training opportunity. Training programs include scholarship payments for college education, vocational and technical training, and other types of training programs.

Table 16. CDQ Group Training Programs, 1993-2001.

Year	Training Opportunities	Training Expenditures (\$)	Expense per Training Opportunity (\$)
1993	346	561,599	1,623
1994	900	815,271	906
1995	599	1,073,810	1,793
1996	939	1,354,493	1,442
1997	846	1,041,309	1,231
1998	1,167	1,378,418	1,181
1999	1,135	1,073,980	946
2000	1,128	1,462,930	1,297
2001	1,246	1,661,030	1,333
Total	8,306	10,422,840	1,255

Source: CDQ Program Office, Alaska Department of Community and Economic Development.

3.4 Employment and Income

Income is an important aspect of the ability of individuals and families to meet their basic needs and the capacity of communities to exercise economic influence and garner resources for collective goods. Further, individuals and families with low-incomes may experience greater risk to their physical and mental well-being. This is especially true in the rural Alaska setting.

Beginning with 1990 U.S. Census, all the communities in rural, western Alaska were experiencing relatively high levels of unemployment, ranging from 9 percent in the Bristol Bay area to 31 percent in the Yukon Delta area (ADCED 2001). While these high unemployment rates partly reflect the seasonality of employment opportunities and the timing of the census in April, they also may show the effects of limited employment opportunities. All CDQ communities had median incomes that were lower than the State median income (ADCED 2001). The median income of the Central Bering Sea area and the Bristol Bay area was less than ten percent below the State level, but in the Yukon Delta area and the Aleutian Pribilof area, the median income was only slightly greater than half the State level (ADCED 2001). The poverty rates in all the CDQ areas except the Central Bering Sea were at least twice the State rate of seven percent.

Employment opportunities have been one of the most tangible direct benefits of the CDQ program for many western Alaska village residents. Indeed, the CDQ program has been successful in securing career track employment for many residents of qualifying communities, and has opened opportunities for non-CDQ Alaskan residents. Jobs directly generated by the CDQ program included work aboard harvesting vessels, internships with the partner company or government agencies, work at processing plants, and administrative positions.

Table 17 summarizes the total annual CDQ employment and wages presented in CDQ quarterly reports. The CDQ program has created an excess of \$8 million in wages annually since 1998. As noted previously, the number of jobs does not necessarily equal the number of people employed, as one person can take advantage of several short-term jobs in any given year.

Table 17. CDQ Employment and Wages for all CDQ groups, 1993-2001¹

	1993	1994	1995	1996	1997	1998	1999	2000	2001
Number of Jobs									
Management/ Administration	26	48	58	63	63	79	96	155	119
CDQ Pollock- Related	186	213	228	261	356	443	244	297	286
Other Fisheries	64	276	393	691	663	634	786	1,146	1,077
Other Employment	95	531	157	138	130	194	213	236	238
Total	371	1,068	836	1,153	1,212	1,350	1,339	1,834	1,720
Total Wages (\$)									
Management/ Administration	586,537	1,012,125	1,218,892	1,636,860	1,803,766	2,284,792	2,661,976	3,084,757	3,440,249
CDQ Pollock- Related	1,000,360	1,280,695	1,866,619	1,686,104	2,660,938	2,649,001	2,149,062	1,741,871	2,533,632
Other Fisheries	609,058	1,000,103	1,132,824	2,280,554	2,756,688	2,075,495	4,201,775	5,959,516	5,250,389
Other Employment	0	1,791,479	1,350,766	723,724	887,338	1,167,173	1,573,358	1,723,054	993,634
Total	2,195,955	5,084,402	5,569,101	6,327,242	8,108,730	8,176,461	10,586,171	12,509,198	12,217,904

Source: ADCED 2001.

¹ Employment figure may not represent full-time positions. In addition, some double-counting of employment and wages may have occurred in the compilation of data for quarterly reports.

From 1993 through 2000, management and administration positions accounted for about six percent of the jobs and 24 percent of the wages. Pollock harvesting and processing accounted for 24 percent of the jobs and 26 percent of the wages. Other fisheries, which include halibut, salmon, sablefish, herring and crab related employment, accounted for 51 percent of the jobs and 34 percent of the wages. Finally, other employment, including onshore seafood processing jobs, jobs with capital construction projects and internships with fishing partners, accounted for 18 percent of the jobs and 15 percent of the wages.

The importance of CDQ pollock-related employment in terms of number of jobs and wages appears to be declining relative to employment in other fisheries and also to CDQ management and administration positions being created within the groups themselves. This trend reflects the expansion of the CDQ program to include other fisheries and the increased investment by CDQ groups in

vessels and processing infrastructure for those fisheries. The average wage for a CDQ pollock-related job continues to surpass that of similar positions in other fisheries.

The average income per individual from CDQ pollock-related employment during the 1993-2000 period was \$7,301. Based on the seasonal cycle of pollock fishing operations, the actual duration of jobs aboard vessels targeting pollock would have been around two months. The income per individual from such CDQ jobs is relatively small, but it can represent a large percentage of the earnings of a typical household in a CDQ community (Peet 1995).

To place the employment and income benefits created by the CDQ program in perspective, the income generated by the program is compared with the total income in CDQ communities. Adjusted gross income data by zip code were provided by the Internal Revenue Service for two years during the period that the CDQ program has existed – 1997 and 1998. Adjusted gross income is the sum of all income from taxable sources less adjustments like moving expenses, alimony payments and IRA contributions.³ The total adjusted gross income for all CDQ communities in these two years was \$242,200,000 and \$252,600,000, respectively. In addition, an estimate of adjusted gross income can be derived for 1999, the most recent year for which personal income data are available from the Regional Economic Information System (REIS) of the U.S. Bureau of Economic Analysis for Alaska boroughs and census areas. In 1997 and 1998, adjusted gross income in CDQ communities was approximately 27.5 percent of the total personal income in the boroughs and census areas in which CDQ communities are located. Applying this percent to the 1999 REIS personal income data yields an estimated adjusted gross income of \$259,800,000 in CDQ communities for that year.

Table 18 shows CDQ wages in 1997 and 1999 as reported to DCED and total adjusted gross income for all CDQ communities as estimated above. CDQ-related income accounted for about 4.1 percent of the total income in CDQ communities by 1999.

Table 18. CDQ Wages Compared with Total Adjusted Gross Income in CDQ Communities, 1997 to 1999

Year	Total Adjusted Gross Income (\$)	CDQ Wages (\$)¹	CDQ Wages as % of Total Adjusted Gross Income
1997	242,200,000	8,108,730	3.3
1998	252,600,000	8,176,461	3.2
1999	259,800,000	10,586,171	4.1

¹ Includes management/administration wages. May include some management/administration wages earned by individuals residing outside CDQ communities.

Sources: DCED (2001); Internal Revenue Service

While this analysis is based on the best information available, it yields only a rough approximation of the contribution of CDQ wages to regional income. As noted above, CDQ management and administration wages account for nearly one-fourth of CDQ wages. Many of the individuals in administrative positions work and reside in non-CDQ communities (Table 4). By including the wages of these individuals, this analysis may overestimate the contribution of CDQ wages to the total income of CDQ communities. Some level of error may also have been introduced in the analysis because IRS income data are reported by zip code. The incomes of a number of small non-CDQ communities that share a zip code with CDQ communities were included in the figure for total adjusted gross income.

³ Because a number of different payments are excluded from adjusted gross income, this measure of income is not comparable to more commonly used measures such as personal income or disposable personal income. It is important to note that adjusted gross income can change for reasons unrelated to changes in earnings. For example, if allowable contributions to IRAs are raised adjusted gross income is affected.

However, given the small size of the non-CDQ communities, it is unlikely that the introduced error appreciably changed the analysis results. Similarly, the incomes of certain CDQ communities (Kongiganak, Napaskiak, Newtok and Oscarville) were omitted from the total adjusted gross income figure because their zip code overlapped with the relatively large non-CDQ community of Bethel. Again, the introduced error is likely insignificant due to the small size of the CDQ communities omitted.

Adjusted gross income data obtained from the IRS for 1997 and 1998 can also be used to examine the contribution of CDQ wages within the region of each CDQ group (Table 19). Among the factors that account for the differences across groups is the presence or absence of communities with comparatively large populations and diverse economies. For example, the CDQ communities of King Salmon and Dillingham in the BBEDC region, and Nome in the NSEDC region, contributed about half of the total adjusted gross income for all CDQ communities in 1997 and 1998. The higher level of economic activity in these towns results in higher incomes and reduces the relative importance of CDQ wages.

Table 19. CDQ Wages Compared with Total Adjusted Gross Income in CDQ Communities by CDQ Group, 1997 and 1998

	APICDA	BBEDC	CBSFA	CVRF	NSEDC	YDFDA
1997						
CDQ Wages (\$)¹	1,343,950	1,480,979	223,201	1,193,590	1,252,493	1,831,355
Total Adjusted Gross Income (\$)	11,115,000	74,730,000	8,517,000	33,381,000	97,171,000	17,256,000
CDQ Wages as % of Total Adjusted Gross Income	12.09	1.98	2.62	3.58	1.29	10.61
1998						
CDQ Wages (\$)¹	1,061,750	1,317,694	714,288	1,645,402	1,663,439	1,773,888
Total Adjusted Gross Income (\$)	10,209,000	80,655,000	8,010,000	35,719,000	100,375,000	17,659,000
CDQ Wages as % of Total Adjusted Gross Income	10.40	1.63	8.92	4.61	1.66	10.05

¹ Includes management/administration wages

Sources: DCED (2001); Internal Revenue Service; U.S Bureau of Economic Analysis

To examine in more detail the economic changes that have occurred in western Alaska communities since the implementation of the CDQ program the estimated average household income in 1991 (adjusted for inflation) can be compared with the average household income in 1998, the most recent year for which income data from the IRS is available. In this analysis, household income is derived by dividing the average adjusted gross income by the average number of income tax returns. The results presented in Table 20 show that, on average, CDQ communities experienced an increase in household income during the 1991-1998 period, with the exception of those communities represented by APICDA. The decrease in average household income between 1991 and 1998 in the APICDA region may have been due to the closure of local military bases, including the closure of the Adak Naval Base.

Table 20. Average Household Adjusted Gross Income in CDQ Communities, by CDQ Group, 1991 and 1998

	Total	APICDA	BBEDC	CBSFA	CVRF	NSEDC	YDFDA
1991¹							
Average Household Income (\$) ²	20,010	28,114	23,158	23,371	11,814	22,703	15,196
1998							
Average Household Income (\$) ²	24,131	23,577	29,233	28,607	15,517	27,350	17,228

¹ 1991 values have been adjusted for inflation using the Anchorage municipality consumer price index.

² Household income was derived by dividing the adjusted gross income by the number of income tax returns.

Source: Internal Revenue Service

Table 21 compares 1991 and 1998 average household income in CDQ communities to average household income in non-CDQ communities within the same boroughs or census areas.⁴ The non-CDQ communities included in the comparative analysis are listed in Table 22. The data include all CDQ communities except those for which there were no data and the city of Grayling.⁵ Disclosure restrictions are the primary reason for the absence of data. Furthermore, the Nome Census Area (which encompasses the NSEDC region) is not included in this comparative analysis, as that census area contains only one non-CDQ community that could be used without violating disclosure restrictions. As shown in Table 23, the difference in average household income between CDQ communities and non-CDQ communities decreased slightly between 1991 and 1998, as average household income grew faster in CDQ communities.

Table 21. Average Household Adjusted Gross Income in CDQ Communities and Non-CDQ Communities by Borough or Census Area, 1991 and 1998

	Aleutians East Borough/ Aleutians West C.A. ¹		Bristol Bay Borough/Dillingham C.A./Lake & Peninsula Borough ²		Wade Hampton C.A./Bethel C.A. ³	
	1991 ⁴	1998	1991 ⁵	1998	1991 ⁵	1998
Average Household Income in CDQ Communities (\$) ⁵	25,622	25,062	23,158	29,233	12,719	16,058
Average Household Income in Non-CDQ Communities (\$) ^{5,6}	32,174	34,983	17,090	21,081	21,481	25,199

¹ Includes the APICDA and CBSFA regions.

² Includes the BBEDC region.

³ Includes the YDFDA and CVRF regions.

⁴ 1991 values have been adjusted for inflation using the Anchorage municipality consumer price index.

⁵ Household income was derived by dividing the adjusted gross income by the number of income tax returns.

⁶ Non-CDQ communities refers to the communities that are located within the same borough or census area as CDQ communities (Table 22).

Source: Internal Revenue Service.

⁴ Because the CDQ program was implemented in 1992, reference to CDQ community income in 1991 refers to income in communities that would eventually be part of the CDQ program.

⁵ Grayling, in the Yukon Delta Fisheries Development Association, is a special case. It is the only CDQ community in the Yukon-Koyukuk (Y-K) Census Area. Because the Y-K Census Area is large and most of the communities are distant from the CDQ fisheries, the non-CDQ communities within the Y-K Census Area are not included in the analysis. To maintain consistency with this treatment of non-CDQ communities in the Y-K Census Area, Grayling is also excluded from the reported data.

Table 22. Selected Non-CDQ Communities, by Borough or Designated Census Area

Borough or Census Area	Community		
Nome Census Area	Council ¹	Shishmaref	
	Mary's Igloo ¹	Solomon ¹	
Wade Hampton Census Area	Andreafsky	Pilot Station	Russian Mission
	Marshall	Pitkas Point ¹	St. Mary's ¹
Bethel Census Area	Akiachak	Chuathbaluk ¹	Nunapitchuk
	Akiak	Crooked Creek	Red Devil
	Aniak	Georgetown ¹	Sleetmute
	Atmautluak ¹	Kwethluk ¹	Stony River ¹
	Bethel	Lime Village	Tuluksak
	Kasigluk	Lower Kalskag	Upper Kalskag
Aleutians West Census Area	Adak Station ¹	Unalaska	
Dillingham Census Area	Koliganek ¹	New Stuyahok	
Lake and Peninsula Borough	Chignik	Chignik Lake	Igiugig ¹
	Chignik Lagoon	Port Alsworth	Iliamna
	Ivanof Bay	Newhalen ¹	Pedro Bay
	Kokhanok ¹	Nondalton	Perryville
Aleutians East Borough	King Cove	Sand Point	Cold Bay ¹

¹This community was not included in the comparative analysis of household adjusted gross income because of disclosure restrictions or overlapping zip codes. However, it was included in the comparative analysis of per capita income.

Table 23. Average Household Adjusted Gross Income in CDQ Communities and Non-CDQ Communities, 1991 and 1998

	1991 ¹	1998
Average Household Income in CDQ Communities (\$)	20,010	24,131
Average Household Income in Non-CDQ Communities (\$) ²	23,618	27,240
Ratio of Average CDQ to Non-CDQ Household Income	0.85	0.88

¹ 1991 values have been adjusted for inflation using the Anchorage municipality consumer price index.

² Non-CDQ communities refers to the communities that are located within the same borough or census area as CDQ communities (see Table 22).

Source: Internal Revenue Service

The differences in household income between CDQ communities and non-CDQ communities can be tested to determine if they are statistically significant. Tests of equality of the means indicate that there was no statistically significant difference between the 1991 average household income in CDQ and non-CDQ communities in all boroughs or census areas.⁶ The difference between the 1998 average household income in CDQ and non-CDQ communities was also not statistically significant in all areas with the exception of the Aleutians East Borough/Aleutians West Census Area. The average household

⁶ Specifically, the hypothesis that the mean household income in CDQ and non-CDQ communities does not differ cannot be rejected at the 95 percent confidence level.

income in CDQ communities located in the Aleutians East Borough/Aleutians West Census Area was significantly lower than income in non-CDQ communities. The principal reason for this income differential is that the Aleutians West Census Area includes Unalaska, a non-CDQ community with an unusually high level of economic activity because of its importance as a fishing port.

U.S. Census Bureau estimates of per capita income for 1989 and 1999 can also be used to examine changes in income levels in CDQ communities over time, as well as compare income levels in CDQ communities to those in non-CDQ communities within the same boroughs or census areas. Per capita income is equal to total income divided by total population, where total income is the sum of all income, including wage and salary income, net self-employment income, and public assistance or welfare payments. Average per capita income and median per capita income were computed from census statistics for each CDQ and non-CDQ community (Table 24). As with the household income analysis, the per capita income analysis includes all CDQ communities except those for which there were no data (for example, there are no 1989 income data for Portage Creek in the BBEDC region) and communities within the Yukon-Koyukuk Census Area. The non-CDQ communities included in the comparative analysis are listed in Table 22.

Table 24. Average and Median Per Capita Income in CDQ Communities and Non-CDQ Communities, 1989 and 1999

	1989 ¹	1999
Average Per Capita Income in CDQ Communities (\$)	13,562	13,203
Average Per Capita Income in Non-CDQ Communities (\$) ²	16,234	16,794
Ratio of Average CDQ to Non-CDQ Per Capita Income	0.84	0.79
Median Per Capita Income In CDQ Communities (\$)	8,791	9,778
Median Per Capita Income in Non-CDQ Communities (\$) ²	10,158	10,294
Ratio of Median CDQ to Non-CDQ Per Capita Income	0.87	0.95

¹ 1989 values have been adjusted for inflation using the Anchorage municipality consumer price index.

² Non-CDQ communities refers to the communities that are located within the same borough or census area as CDQ communities (Table 22).

Source: U.S. Census Bureau

In 1989, average per capita income in CDQ communities was \$13,562 (all 1989 values are adjusted for inflation). In that year, per capita incomes in CDQ communities varied from a low of \$3,332 in Kipnuk to a high of \$28,189 in Nelson Lagoon. In non-CDQ communities, the average per capita income was \$16,234, and per capita incomes ranged from \$3,137 in Stony River to \$32,374 in Cold Bay. Average per capita income in CDQ communities was 84 percent of that of non-CDQ communities in 1989. In 1999, per capita income in CDQ communities averaged \$13,203 and ranged from \$5,825 to \$27,596 (in Oscarville and Nelson Lagoon respectively). Per capita income in non-CDQ communities averaged \$16,794 and ranged from \$5,469 to \$31,747 (in Stony River and Adak Station, respectively). The gap in average per capita income between CDQ communities and non-CDQ communities increased slightly between 1989 and 1999.

As in the comparison of household adjusted gross income, the difference in per capita income between CDQ communities and non-CDQ communities can be tested to determine if it is statistically significant. Tests of equality of the means indicate that there was no statistically significant difference between the 1989 average per capita income in CDQ and non-CDQ communities. The difference between the 1999 average per capita income in CDQ and non-CDQ communities was also not statistically significant.

The implication of the results of these comparisons between CDQ communities and non-CDQ communities in terms of household and per capita income is that the communities participating in the CDQ program have neither fallen behind economically nor gained significantly relative to similar communities that do not participate in the program. One possible interpretation of these results is that the CDQ program has not been effective in significantly raising incomes in the participating communities. However, it is also possible that the income growth in participating communities would have been smaller without the CDQ program.

3.5 Indirect Employment and Income Effects

Some of the income earned in CDQ jobs, as well as spending for supplies and services in support of CDQ projects, passes through local merchants, service providers, and others before leaking out of the region in exchange for imports. The additional employment and income generated in this way is referred to as indirect economic impacts. An estimation of these impacts for fish harvesting and processing industries in the boroughs and census areas in which CDQ communities are located indicate the following:⁷

- In the commercial fishing sector nine additional jobs are generated for every 100 jobs in this sector and about \$150 in additional labor income is generated for every \$1,000 paid for labor; and
- In the seafood-processing sector, 35 additional jobs are generated for every 100 jobs in this sector and about \$230 in additional labor income is generated for every \$1,000 dollars paid for labor.

These indirect economic impacts are relatively low because in a rural area such as western Alaska, very few goods and services are provided locally, and money flows out of the region relatively quickly. Nevertheless, every contribution to jobs and income helps, and these additional economic impacts of the CDQ program should not be overlooked.

3.6 Subsistence Benefits

The CDQ program may also have a positive economic impact on households in western Alaska by helping support subsistence activities. Subsistence fishing and hunting continue to figure prominently in the household economies and social welfare of many western Alaskan residents, particularly among those living in the smaller villages (Wolfe and Walker 1987). Further, subsistence remains the basis for Alaska Native culture and community (Keys 1997). In rural Alaska, subsistence activities are often central to many aspects of human existence, from patterns of family life to artistic expression and community religious and celebratory activities.

⁷ The estimate of indirect employment and income effects was obtained from an IMPLAN input-output model of a region encompassing nine boroughs and census areas in which CDQ communities are located. The IMPLAN model is based on national average production functions of the industries of interest. However, regional purchase coefficients, location quotients or supply/demand pooling are used to reflect regional trade flows.

The problem faced by western Alaskan communities is how to acquire the monetary means from the market economy to support subsistence activities. As stated by the National Research Council (1999:39-40),

...“subsistence” is no longer a phenomenon of the people’s own making... It depends decisively and unconditionally on monetary flows from the public and private sectors for the acquisition of necessary capital. Changes in lifestyle including settlement patterns in the villages, improved safety, the availability of technology, and the desire for other market goods that reduce the time available for subsistence activities have contributed to the increasing importance of capital for conducting subsistence activities.

By offering western Alaskans opportunities for periodic, well-paying employment in the fishing industry, the CDQ program preserves options for the local people to continue some elements of their subsistence lifestyles. For example, seasonal jobs aboard industrial-scale fishing vessels targeting pollock allow western Alaskans to return to their villages in time to participate in subsistence harvests of salmon and herring.

4 Survey of Community Representatives

This assessment of the CDQ program also collected new community-level data by means of a mail survey administered to local leaders and public officials in all of the CDQ communities. A copy of the survey questionnaire and cover letter are included in Appendix B. The intention of the survey was to supplement information obtained from externally compiled data sources. Most of the individuals to whom the survey was administered are not beneficiaries of or participants in the CDQ program. However, their input provides useful information about the level of community awareness of the program, types of CDQ activities taking place and ways in which the program could be improved.

Of the 400 surveys that were mailed out, 50 were returned, a response rate of approximately 13 percent. Due to the low response rate, it is not known how accurately the observations and opinions expressed reflect the viewpoints of the population of community representatives as a whole. As shown Table 25, public officials of 30 CDQ communities returned completed surveys. These communities represented all six CDQ groups.

Table 25. CDQ Groups and Communities Represented in the Survey

CDQ Group	Communities	CDQ Group	Communities
APICDA	Atka	YDFDA	Sheldon Point
	Nelson Lagoon		Kotlik
	False Pass		Emmonak
	Akutan		Alakanuk
BBEDC	Togiak	NSEDC	Elim
	Port Heiden		Koyuk
	Clark's Point		Teller
	South Naknek		Brevig Mission
	Manokotak		Unalakleet
	Twin Hills		Nome
	Egegik		White Mountain
	Aleknagik		
Dillingham			
CVRF	Napaskiak	CBSFA	St. Paul
	Hooper Bay		
	Eek		
	Kongiganak		
	Toksook Bay		

Among the community officials who responded to the survey, six percent knew nothing at all about the CDQ program, 22 percent knew a little, 31 percent were somewhat familiar, and 41 percent were very familiar with the program. While the large majority of the survey respondents knew

something about the CDQ program, officials in five villages reported that their communities had seen few, if any, benefits from the program. Some respondents complained that certain large CDQ communities, such as Dillingham and Nome, were receiving an unfairly large share of CDQ program resources.

Those respondents who reported that CDQ program activities were occurring in their communities were generally very enthusiastic about the benefits of the program. In response to a question about what types of program activities households and individuals have benefited from they listed activities discussed previously in this analysis, such as the offering of scholarships and internships, support of local fishing and processing enterprises, development of shore-side infrastructure, and placement of residents in seasonal jobs aboard catcher processors.

An unexpectedly large percentage (57 percent) of the 30 communities that responded reported that local businesses have been positively affected by CDQ activities. Community representatives noted that fishery support businesses have benefited from the increased demand for marine fuel, fishing gear, boat repairs, etc. caused by CDQ program initiatives that have led to an expansion of fishing and processing activity. In addition, it was reported that local businesses, in general, have profited from the increased purchasing power of local residents whose incomes have been raised by the CDQ program. Other respondents noted that the public sector has also benefited in various ways, from increases in local tax revenues to donations of fish to local schools.

The most frequently recommended change to the CDQ program was to allow CDQ groups to make investments in projects that are not fisheries-related. Other oft-mentioned suggestions were to make the allocation of quota among CDG groups more stable and to encourage CDQ groups to base their administrative offices in the regions they represent rather than in distant cities such as Anchorage or Juneau.

5 Conclusion, Discussion and Recommendations

This analysis found that the CDQ program has increased the capacity of residents in communities in western Alaska to create wealth. It has done so by increasing investment capital, employment opportunities, and the availability of skilled labor. While these indicators may describe only a limited aspect of community development, the authors of this report would argue that economic growth is fundamentally linked with social well-being or quality of life in the communities participating in the CDQ program, both now and in the future.

The revenue stream from the lease of CDQ allocations has provided substantial capital for making investments in fisheries-related activities. These investments have significantly increased the participation level of Alaska residents, in general, and residents of western Alaska, in particular, in the groundfish fishery and other highly industrialized fisheries occurring in the Bering Sea and Aleutian Islands area. Given that Seattle-based fishing and processing companies have long dominated these fisheries, this added level of participation by Alaskans represents an important contribution to the State economy, as a whole, as well as to local village economies.

The analysis further found that the CDQ program has provided employment opportunities for residents of communities that have suffered from chronic unemployment. CDQ wages account for a relatively small percentage of total income in CDQ communities. However, the large majority of CDQ communities are small villages where even marginal increases in employment rates can be important in maintaining the community's economic viability.

Also beneficial to local residents are the investments in human capital in the form of education, on-the-job training, leadership, organizational skills, entrepreneurial, and business management skills made by the CDQ programs. These efforts toward human capital formation contribute to the collective ability of residents in CDQ communities to create and take advantage of economic opportunities, thereby promoting economic self-determination within these communities. Moreover, such investments stimulate the people's internal capacity (i.e., motivation and belief in their own skills and abilities) through participation in and control of the economic activities undertaken.

This is not to say that the CDQ program does not have significant economic limitations. First, while this analysis indicates that the program has generated economic benefits, these benefits may not be evenly distributed. Aggregate socioeconomic measures can mask important distribution issues among families and communities. In addition, information from a preliminary survey of local leaders and public officials in CDQ communities indicates that some village representatives feel that their communities have been left out of the CDQ program, with most of the benefits going to larger population centers.

Secondly, the stipulation that CDQ groups invest only in fisheries-related activities may make little economic sense over the long term.⁸ There could be other potential investments offering higher or at least more stable returns than those in the fisheries sector. Townsend (1996) notes that the competition among CDQ groups to exploit Alaska's limited fishery resources could result in CDQ funds being used to overcapitalize fisheries that are already fully exploited. In addition, requiring communities to invest in a single economic sector may increase the tendency for communities to

⁸ In June 2002, the NPFMC voted to amend the BSAI FMP to allow each CDQ group to invest up to 20 percent of its previous year's pollock CDQ royalties in non-fisheries related projects. The amendment specifies that any non-fisheries related investment has to be made in economic development projects in the region of Alaska represented by the CDQ groups. In addition, fisheries-related projects are to be given more weight in the allocation process than non-fisheries related projects.

become “one company” towns. Such dependence makes them vulnerable to downturns caused by factors ranging from changing global markets to bad weather and fluctuations in resource abundance. Finally, the requirement that CDQ groups invest only in fisheries-related activities may make it difficult to evenly distribute the benefits of the CDQ program, as some CDQ communities are more favorably situated than others to invest in and profit directly from the fishing industry.

A thorough on-site assessment of the CDQ program is needed to shed more light on these and other issues. Perhaps, the most effective way of conducting this assessment would be to adopt a “bottom-up” or “participatory” approach whereby the residents of CDQ communities are directly involved in the development of appropriate criteria to evaluate the program and in the information gathering and review process. For example, a community may come up with a very different list of variables for assessing the CDQ program than a government department interested in tracking program performance. Such an assessment could more directly address how effectively individuals and families (and each community as a whole) have utilized the resources generated by the CDQ program to enhance their quality of life. In addition, this approach could have the added benefit of helping identify the interconnections between the CDQ program and various kinds of community development issues, thereby leading to the formulation of entirely new types of CDQ projects.

Assisting communities to measure the overall effectiveness and impact of the CDQ program would help the State of Alaska, as well as the communities, specify the goals and objectives of the CDQ program in terms of providing residents of western Alaska communities a fair and reasonable opportunity to participate in the BSAI groundfish fisheries; to expand their participation in salmon, herring, and other near-shore fisheries, and to help alleviate the growing socioeconomic crisis within these communities. This clarification of goals and objectives would further define the Western Alaska Community Development Quota program’s vision for growth over the next decade and would provide the State and communities with additional standards by which the success of the program may be measured.

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Appendix A: Additional Economic and Demographic Information

This appendix presents selected economic and demographic data from the 1990 U.S. Census and 2000 U.S. Census for CDQ communities, non-CDQ-communities within the same boroughs or census areas, and the State of Alaska. The information provides socioeconomic profiles of these different areas at two points in time and is intended primarily for reference purposes. Northern Economics, Inc., (December 2001) contains additional fiscal, demographic and economic statistics from the U.S. Census Bureau and Alaska Department of Community and Economic Development on communities participating in the CDQ program and on the boroughs and census areas in which those communities are located.

Table 26 shows selected quantitative measures of socioeconomic development in communities, including unemployment, educational attainment, income, and level of poverty. These socioeconomic characteristics assist in identifying the capacity of a population to develop the full potential of their environment and adapt to changing conditions. In comparison to aggregated information for all of Alaska, the CDQ communities appear to have more than the usual socioeconomic development deficits as indicated by education and income. However, it is important to recognize that these quantitative measures are only one set of indicators of existing socioeconomic development in the CDQ communities. The residents of these communities may possess other useful resources, skills, and knowledge systems that have not been captured in the measures presented. It also important to treat these measures as general benchmarks, as differences across regions or between time periods may not be statistically significant.

Table 26. Selected Measures of Socioeconomic Development, 1990 and 2000

	Population	Unemployment Rate (%) ¹	College Graduates 25 Years and Older (%)	High School Graduates 25 Years and Older (%)	Per Capita Income (\$) ²	Individuals Below Poverty Threshold (%)
State of Alaska						
1990	550,043	8.8	23.0	86.6	17,610	8.7
2000	607,583	9.0	24.7	88.3	22,660	9.4
All CDQ Communities						
1990	24,010	19.7	12.5	64.6	10,208	25.2
2000	27,073	32.9	15.6	71.2	13,203	21.3
All Non-CDQ Communities³						
1990	21,870	8.2	14.8	73.6	12,219	17.6
2000	21,309	14.7	13.3	76.1	16,794	17.5
APICDA						
1990	987	2.7	15.4	66.7	12,858	20.9
2000	1,143	62.7	7.9	68.3	15,518	29.6
BBEDC						
1990	5,411	10.0	16.6	75.8	15,047	16.3
2000	5,932	11.0	17.5	79.2	17,878	17.5
CBSFA						
1990	763	10.8	3.2	61.7	15,115	6.6
2000	532	15.0	10.5	73.6	18,408	11.9
CVRF						
1990	6,484	20.5	7.9	55.9	5,251	40.3
2000	7,855	19.9	12.0	56.2	8,265	26.1
NSEDC						
1990	7,702	33.8	14.3	65.3	11,357	21.5
2000	8,488	16.3	14.9	74.6	15,690	17.4
YDFDA						
1990	2,638	32.4	9.7	55	7,027	24.2
2000	3,123	25.8	7.3	63.5	8,248	25.7

¹ All census data for Akutan reflect 638 individuals reported to be living in group quarters. The unemployment rate reflects the percentage of the labor force that was unemployed during the week that the census questionnaire was administered and may not represent long-term unemployment. For example, the high rate of unemployment reported for the APICDA region may be partially because the census was conducted when the fish processing plant in Akutan was temporarily closed in between fishing seasons.

² Per capita income data are for calendar years 1989 and 1999.

³ Includes the selected non-CDQ communities listed in Table 22.

Source: U.S. Census Bureau Census 2000.

Additional demographic data for the communities represented by each CDQ group are presented in Table 27. A notable demographic attribute is the large proportion of young people in the resident populations of some areas.

Table 27. Summary Demographic Characteristics for CDQ Groups, 2000

	APICDA	BBEDC	CBSFA	CVRF	NSEDC	YDFDA
2000 Population	1,143 ^a	5,932	532	7,855	8,488	3,123
1990 Population	986	5,224	763	6,484	7,621	2,638
1950 Population	277	1,701	359	4,803	4,326	515
Percent Change between 1990 and 2000	16%	14%	-30%	21%	11%	18%
Percent Native	42%	69%	87%	93%	79%	95%
Housing Units	247	3,100	214	3,404	2,837	836
Occupied Housing Units	185	2,002	177	3,005	2,500	714
Unoccupied Housing Units	62	1,098	37	399	337	122
Seasonal Housing Units	18	828	11	105	93	38
Owner Occupied Housing Units	132	1,161	102	1,754	1,421	509
Renter Occupied Housing Units	53	841	75	1,251	1,079	205
Population in Households	499	5,899	510	7,855	8,286	3,123
Population in Group Quarters	644	33	22	0	202	0
Total Number of Households	185	2,002	177	1,797	2,500	714
Average Household Size	2.4	3.1	3.0	4.4	3.3	4.4
Total Number of Family Households	127	1,359	123	1,459	1,759	582
Average Family Household Size	3.1	3.6	3.0	5.4	4.0	4.9
Number Under 5 Years	36	537	38	801	742	83
Percent Under 5 Years	3%	9%	7%	10%	9%	13%
Number 18 Years and Over	975	3,772	375	4,393	5,343	1,714
Percent 18 Years and Over	85%	64%	71%	56%	63%	55%
Number 65 Years and Over	38	316	29	442	501	161
Percent 65 Years and Over	3%	5%	6%	6%	6%	5%

Source: DCED 2001, U.S. Census Bureau, Census 2000.

^a Includes population in group quarters who may not be year-round residents.