

An Evaluation of the Atlantic Coastal Action Program (ACAP) : Economic Impact and Return on Investment

prepared by:

Gardner Pinfold Consulting Economists Limited

prepared for:

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Executive Summary

The Atlantic Coastal Action Program (ACAP) is a community-based model of ecosystem management. There are 14 ACAP organizations throughout Atlantic Canada working toward their collective goal of developing local capacity to take responsibility for their own futures. Supporting ACAP projects and programs provides Environment Canada with a unique opportunity to fulfill its departmental mandate in a number of important ways. . This report assesses economic impacts, the cost of an alternative delivery approach, and identifies advantages associated with community-based delivery during most of the second phase of ACAP from 1997-2001.

An assessment of the advantages of the community-based program delivery approach, as demonstrated by the ACAP model, indicates that,

- Community-based management within ACAP helps to engender productive partnerships
- ACAP provides communities with an opportunity to address their own identified environment-related concerns
- ACAP provides communities with non-partisan information and opportunities to learn about environmental stewardship
- ACAP organizations continue to secure alternate sources of funding
- ACAP projects motivate other organizations and agencies to work toward stewardship objectives
- ACAP organizations are optimistic and enthusiastic about their future

Quantitative and qualitative analyses of ACAP's contribution to Atlantic Canada over the past five years are provided. Specifically,

- Quantitative results indicate that it would have cost Environment Canada 12 times their current ACAP program expenditures if the department had used direct delivery to accomplish what the 14 ACAP organizations accomplished during 1997-2002.
- Evidence from qualitative analysis suggests that the above estimate is conservative and that the community-based nature of program delivery is an important factor contributing to ACAP's success.

Results within this report indicate that Environment Canada obtained a substantial return on their investment into ACAP. ACAP is an economic and effective way of delivering community-based activities that contribute to Environment Canada's goals.

I. Introduction and Study Objectives

1. Introduction

The Atlantic Coastal Action Program (ACAP) has contributed in significant ways to the achievement of most of Environment Canada's desired results at the community level in Atlantic Canada over the last 10 years. The collaborative arrangements built through the ACAP Model have stimulated investment of time and resources into community environmental improvements, science and research, capacity building, and action; and have leveraged significant amounts of private sector and in-kind voluntary support for every federal dollar provided to the ACAP organizations.

Environment Canada is interested in estimating the total economic impact of the ACAP initiative over the 1997 - 2001 period, including direct and spin-off impacts. In addition, Environment Canada wants to estimate what the outputs of ACAP would have cost the department, had those same outputs been delivered exclusively by the department, and not through community-based collaborative arrangements.

This analysis explores the economic benefits of the program, and evaluates whether or not ACAP is an economic and efficient means of achieving Environment Canada's goals. In combination, it is expected that the results of this economic analysis will support the development of a business case that will ultimately address the continuance (and potential expansion) of ACAP for another five years.

2. Background

In 1991, faced with an urgent need to restore coastal environments so that they would sustain coastal communities, Environment Canada initiated the Atlantic Coastal Action Program, as a means of empowering local communities to take the lead in identifying and addressing their environmental and development challenges. Through ACAP, Environment Canada partners directly with, and in support of, 14 ecosystem-based organizations at the individual watershed-estuary level. In the ten years since the ACAP groups were initiated,

the multi-stakeholder, community-led program has exceeded Environment Canada's expectations delivering on-the-ground actions in all of the department's Business Lines. In the first phase of ACAP (1991-1997), the individual ACAP organizations brought the environment back to the top of the agenda in the thirteen (now fourteen) participating communities, allowing them to develop a vision of their future, set objectives to reach their visions, establish Comprehensive Environmental Management Plans to achieve their objectives, and complete hundreds of individual projects. All the organizations were provided with annual core funding from Environment Canada to help carry out this work.

In the second phase of ACAP (1998-2003), while Environment Canada continues to provide funding and human resources to the individual ACAP organizations for results-based projects identified in their Comprehensive Environmental Management Plans, other resources come from many additional and diverse sources. Many of the projects carried out to date have built local capacity through education and outreach, working relationships with business and industry, government-community collaborative arrangements in science, and direct community action. This work has resulted in substantial improvements in key areas such as water quality, the quantity and quality of wildlife habitats, reduction in toxic substances, and adaptation to climate change.

3. Objectives

The specific objectives of this analysis include:

- Evaluate the economic impacts (direct and spin-off) to the economy of Atlantic Canada of the Atlantic Coastal Action Program between 1997 and 2001. These impacts are associated with the conduct and administration of projects and other activities supported by the ACAP organizations. The impacts will not include those associated with project outcomes or results.
- Calculate the total cost of achieving ACAP outputs assuming they had been delivered exclusively by Environment Canada-Atlantic Region, without the participation of a community-based mechanism such as ACAP or the involvement of other government departments or the private sector.
- Provide an assessment that reasonably and objectively assesses the advantages of the community-based approach to project and program delivery.

II. Economic Impact of ACAP

1. Purpose

From an operational standpoint, ACAP organizations have been important generators of economic activity through the delivery and administration of their projects. The purpose of this analysis is to document the scale of collective economic impacts the ACAP organizations are having on their respective provincial economies.

2. Methodology

To undertake this analysis we collected, where possible, from each of the ACAP organizations their total expenditure data for a five year period of 1997-2001. In most cases the data was taken from audited annual financial reports.

To undertake the economic impact analysis, the expenditure data was converted into an input vector and run through the EcoTec Economic Model (see the appendix for information about EcoTec Consultants and their model.). This state-of-the-art model is a privatized version of the Statistics Canada Inter-provincial Input Output Model. Input Output analysis allows us to simulate how various sectors of the economy interact through the purchase or supply of goods and services. The model provides a means to estimate economic changes that result from new economic activity. The operation of the ACAP organizations is assumed to be the new economic activity in this case. The model has been run to simulate the activities in each of the four Atlantic Provinces. Impacts for the total Atlantic Region are the sum of impacts that occur at the provincial level.

Economic Impacts have been estimated for all ACAP activities, as represented by their expenditures for the five years of 1997-2001. The impacts presented are cumulative for the five-years. The impacts are estimated for both direct impacts and spin-offs attributable to the expenditures made by the ACAP organizations. Direct Impact is defined to include those expenditures made by ACAP organizations and its resulting income and employment. Spin-off impacts, often referred to as the multiplier effect, include both indirect and induced impacts. Indirect impacts are those gained by firms or organizations supplying goods and

services to support the ACAP organization activities. Induced impacts are those attributable to income and employment generated by consumer spending at the direct and indirect impact stages.

3. ACAP Expenditures

Over the five year period of 1997-2001, ACAP organizations spent a total of about \$13.5 million to implement and administer their projects. Table 1 shows a summary profile of expenditure by category. Overall spending on wages and benefits account for 65 percent of total spending. These values are based on both audited and unaudited financial records for the period 1997-2001 obtained from each ACAP organization. Where financial information was not available, conservative estimates were made by Gardner Pinfold Consulting Economists.

**Table 1: Total ACAP Organization Expenditures by Province
1997-2001 (\$)**

	Newfoundland	Nova Scotia	Prince Edward Island	New Brunswick	Total Atlantic
Purchased Goods	56,700	486,100	191,400	1,260,700	1,994,900
Business Services	231,900	1,328,000	331,100	786,000	2,677,100
Wages and Benefits	516,200	4,037,000	1,185,400	3,034,600	8,773,200
Other	15,500	6,900	5,900	55,100	83,300
Total	820,300	5,858,000	1,713,800	5,136,400	13,528,500

Source: Individual ACAP Organization Financial Statements 1997-2001. Some estimates for missing values were made by Gardner Pinfold.

4. Employment Impacts

The ACAP total employment impact over the five years amounts to 482 person-years of employment across Atlantic Canada. On an annual basis, this would be an average of almost 100 person-years. A person-year of employment means one person is employed full-time for one year. Direct employment is estimated at 325 person-years. Spin-off employment amounts to 157 person-years. Table 2 shows the employment impacts attributable to the ACAP organizations over the five years on a province-by-province basis. We note that there are 37 people employed as core staff at ACAP organizations. In addition, most ACAP organizations employ part-time people for contract or temporary positions. We understand, over 160 people could be employed in such positions at a given point in time. Many of these jobs would be a few months in duration.

Table 2: Employment Impacts - Direct, Spin-off and Total (Person Years)

	Newfoundland	Nova Scotia	Prince Edward Island	New Brunswick	Total Atlantic
Direct	15	155	44	112	325
Spin-off	9	71	20	57	157
Total	24	226	64	169	482

Source: As estimated by the EcoTec Economic Impact Model

5. GDP Impacts

Gross Domestic Product (GDP) is an important measure of economic activity., It includes income for households (gross wages and salaries plus supplementary labour income), private sector income (gross profits plus depreciation) and government indirect tax (less subsidies) revenues. The total GDP impact in Atlantic Canada over five years arising from ACAP is \$22.01 million. The Direct GDP accruing due to the project activities amounts to \$9.90 million. Spin-off GDP is \$12.11 million. Table 3 shows GDP impacts attributable to the ACAP organizations on a province by province basis.

Table 3: GDP Impacts - Direct, Spin-off and Total (\$ Millions)

	Newfoundland	Nova Scotia	Prince Edward Island	New Brunswick	Total Atlantic
Direct	0.57	4.46	1.29	3.58	9.90
Spin-off	0.77	5.61	1.54	4.19	12.11
Total	1.34	10.07	2.83	7.77	22.01

Source: As estimated by the EcoTec Economic Impact Model.

6. Taxation Impacts

The use of the EcoTec Model also allows for an estimate of taxation impact to be derived. Over the 1997-2001 time period the conduct and administration of ACAP projects generated a total tax impact of \$8.03 million split on a 55/45 basis between federal and provincial governments. Table 4 shows a summary of taxation impact on a province by province basis.

Table 4: Taxation Impacts - Federal and Provincial (\$ Millions)

	Newfoundland	Nova Scotia	Prince Edward Island	New Brunswick	Total Atlantic
Federal	0.27	2.11	0.55	1.53	4.46
Provincial	0.23	1.61	0.46	1.27	3.57
Total	0.50	3.72	1.01	2.80	8.03

Source: As estimated by the EcoTec Economic Impact Model.

III. Alternative Delivery Cost Analysis

The purpose of this section is to estimate what the cost to Environment Canada would have been to deliver the same outputs had ACAP not operated within the community-based model approach. For this analysis, the underlying assumption is that in order to achieve the same program outputs over the 1997-2001 time period as the 14 ACAP organizations, the department would have needed to set up the equivalent of 14 community offices.

1. Approach

To estimate the total costs for Environment Canada to operate 14 community offices, we reviewed the office structures, personnel requirements and specific project activity of the existing ACAP offices. On the basis of this review, we defined 3 categories of office - small, medium and large. A list of ACAP organizations in each category is provided within the appendix.

Then to estimate what it would take for Environment Canada to operate these same offices and undertake comparable project activities, we met with departmental officials to identify personnel requirements and associated overhead support. Total cost of operations is assumed to be a function of the number of personnel assigned to each office. To match the three categories of office the following table shows the estimated personnel requirements for each size category.

Table 5: Personnel Requirements by Office Size

	Small	Medium	Large
Executive Director	1	1	1
Secretary	1	1	1
Project Leader	1	3	5
Project Staff	2	9	15
Total	5	14	22

Each of these positions were then matched to equivalent Public Service job classification categories to develop an estimate of salary and benefits costs.

2. Results

To estimate non-salary components of the cost analysis, we used a model developed by Environment Canada to estimate direct non-salary costs, capital depreciation as well as indirect costs (overhead). The model generated the following cost estimates as shown in Table 6, for each of the three categories of office.

Table 6
Alternative Delivery Cost Analysis
Summary of Estimated Annual Costs (\$) by Size of Office

	Small	Medium	Large	
Number of ACAP Organizations by Office Category	4	7	3	
Estimated Annual Costs				
Direct Salary Costs (including benefits)	332,000	874,000	1,358,000	
Direct Non-Salary Costs (project support budgets)	45,000	119,000	185,000	
Depreciation (mainly computers, software and furnishings)	2,000	4,000	6,000	
Overhead (rent, heat, lights etc.)	38,000	100,000	155,000	
Total Estimated Annual Costs	417,000	1,097,000	1,704,000	
Total Estimated Annual Cost by Office Category	1,670,000	7,679,000	5,112,000	14,461,000

Table 7 shows the total overall cost to Environment Canada of operating ACAP as a full departmental responsibility on both an annual basis and for the five-year (1997-2001) period.

**Table 7: Alternative Delivery Cost Analysis
Total Annual and Five-Year Costs (\$)**

Total Annual ACAP Alternative Delivery Program Cost	14,461,000
Total five Year 1997-2001 ACAP Alternative Delivery Program Cost¹	71,049,000

As can be seen in the above Summary Table, on an annual basis, it would have cost Environment Canada almost \$15 million to staff and operate offices that would have essentially replicated the activities conducted by the 14 ACAP organizations. Over the five-year period of 1997-2001, total costs would have been in excess of \$71 million. This compares to actual expenditures made by Environment Canada over this same time period of \$6.1 million - more than a ten-fold difference.

We estimate cash flow through the ACAP organizations over this period was \$13.5 million. Of the \$13.5 million in funds administered by the ACAP organizations over five years, the department contributed \$6.1 million as compared with the \$71 million it would have cost to have the 14 ACAP organizations operate as Environment Canada community offices.

In effect, it would have cost Environment Canada more, on an annual basis, to achieve ACAP outputs than it cost the ACAP organizations to operate over the full five-year period.

¹ An adjustment was made to reflect that one site has only been in operation for three years.

IV. Assessment of Advantages of Community-Based Delivery

1. Introduction

The goal of ACAP is to develop local capacity in local communities and to ensure that these communities take responsibility for their own futures. Since 1991, several communities throughout Atlantic Canada have been working toward management of coastal watersheds with support from Environment Canada's ACAP initiative. A major achievement of ACAP organizations during the first five-year period was the development and initial implementation of Comprehensive Environmental Management Plans (CEMP). CEMPs are long-term strategies representing the community's priority goals and objectives for management of the local ecosystem. In large part, these priorities reflect the objectives identified within Environment Canada's mandate. Other key areas of achievement during its first five years of existence, as identified by Ellsworth *et al.* (1997), are listed below.

- Sustainable quality of life through the diversification and sustainability of livelihoods.
- Maintenance and protection of biological and cultural diversity.
- Water quality to meet the present and future needs of all users, including wildlife.
- Citizen empowerment to take responsibility for their part of the ecosystem and possess the information and skills required to carry out those responsibilities.
- Strategies established for the restoration and sustainable development of ecosystems; ensuring all stakeholders have access to a common understandable information base to monitor the state of their environment and make informed decisions.

Since 1997, ACAP organizations have focused on implementing projects and programs that will enable their communities to accomplish the objectives outlined in their management plans. ACAP organizations have made much progress over the past five years toward reaching their communities' goals, including continued achievement in the above-mentioned five key areas identified by Ellsworth *et al.* The following outlines some of this progress and indicates resultant advantages of the community-based approach to delivery.

2. Method

Information about the 14 ACAP organizations was gathered through interviews with the executive directors at each organization. Interviews were conducted either in-person or by phone.

3. How Does the Community-Based Approach Work?

The basic ACAP structure consists of a community board, an executive director and a small staff. Community refers to the common unity of concerns that people have for the social, economic and environmental prosperity of the region within the watershed. ACAP organizations pride themselves on being transparent and they are motivated to listen to and address the concerns of the watershed community. In general, the role of the board is to manage the organization's overall direction while on-site staff manages day-to-day activities.

The benefits of community-based management are numerous and compelling, as evidenced by the ACAP experience. This model enables members of the community to identify management issues and assign priorities. A mix of expertise among board members and the participation of non-voting advisory personnel during meetings places communities in an excellent position to make these decisions. Community-based management has also made it possible for the whole community, including industry, to take responsibility for the stewardship of their own environment whereby moral-suasion¹ has reduced confrontation and command-and-control techniques for effecting change. Projects that would not have been possible in the past have been made possible through volunteerism and in-kind contributions associated with the community-based approach.

4. Roles and Accomplishments

Roles

Individual ACAP organizations see their role in a variety of different ways. While some embrace the idea of promoting sustainable development, including social, economic and environmental aspects within their community, others focus more on environmental stewardship and welcome the economic and social improvements as beneficial spin-offs.

ACAP organizations serve important functions within their communities. While roles may be similar, the perspective of each ACAP organization depends on the particular needs within the community and is therefore unique. When asked to comment about the role of their ACAP organization, executive directors provided various descriptions, such as to:

- improve awareness and a sense of community;
- motivate and empower the community to address their own needs;
- build capacity;
- act as the medium or facilitator through which the community can accomplish its goals;
- bring people together;
- be honest brokers of information;
- change attitudes toward conservation and stewardship;
- educate;
- help develop a sustainable community;
- help improve the quality of life and environment within the watershed;
- act as an environmental monitor;
- identify issues;
- lobby;
- act as the thread that holds initiatives together; and
- continue local conservation.

Accomplishments

Certain themes prevailed when ACAP organizations identified their major accomplishments. Themes of trust, credibility, facilitation and education and awareness were most common. ACAP organizations throughout the Atlantic provinces have gained the trust of their communities. ACAP organizations are viewed as non-partisan purveyors of information concerned with helping their community, rather than promoting an ulterior agenda. The quality of the scientific research associated with ACAP has gained respect of scientists worldwide. This combination of trust and credibility provide the foundation for ACAP to build unprecedented collaborative arrangements among various levels of government and government agencies, industry, interest groups and concerned citizens. Benefits of such collaborations include a sense of community and stewardship responsibility and of empowerment to help resolve existing problems. ACAP organizations are able to engage industries and government agencies that can help support projects relevant to the community's environmental management plan while industry and government benefit from a mechanism that provides access to the community. ACAP organizations act as the facilitators through which community members identify issues and share information and skills that will help them to work towards a sustainable environment. Learning opportunities also exist throughout ACAP organizations; they provide a forum for staff and volunteers to share stewardship information with the broader community and they often provide an opportunity for young graduates to gain work experience in environmental research and community-based management.

5. Programs and Projects

ACAP activities can be described as ongoing programs and discreet projects. Programs include initiatives such as education and awareness activities, whereas a project would be an initiative, such as a research project, with a defined beginning and end. There are a multitude of ACAP activities ranging from water quality monitoring to education within the classroom to beach sweeps and paint swaps. Most of these projects are executed through collaborations with government, industry other organizations and/or other ACAP organizations. Most organizations also have store-front offices that community members can visit to access information or express their concerns.

Examples of projects for each ACAP organization are provide in the following text table. This list illustrates the breadth and diversity of projects and concerns addressed through ACAP. All of these projects are making a considerable contribution toward achieving the goals defined in the CEMPs prepared at each organization.

Table 8: Examples of Some Accomplishments of Each ACAP Organization

ACAP Organization	Accomplishments
Nova Scotia	
Clean Annapolis River Project (CARP)	CARP’s primary accomplishment relates to improvements in local water quality. These have been achieved through a variety of projects and programs including water quality monitoring (the current data series contains ten years of results), public awareness and education and remediation. As a result of their work, farmers have adopted more environmentally responsible agricultural practices and a wetland is now being used for tertiary treatment of sewage.
Pictou Harbour Environmental Protection Plan (PHEPP)	Two of PHEPP’s projects, Waterfest and the biomarker-caged bivalve project, have resulted in notable achievements in public education and scientific research, respectively. Waterfest is a 3-day educational exhibit for school children and the general public with over 30 demonstrations that illustrate the importance of water. The biomarker-caged bivalve project involves cutting-edge research on environmental effects monitoring and was designed in collaboration with the Department of Fisheries and Oceans. Some results from this work have been presented at an international environmental toxicology (SETAC ñ Society of Environmental Toxicology and Chemistry) conference.
Bluenose ACAP (BACAP)	Work done by BACAP can be directly credited with Lunenburg gaining access to funds to build a sewage treatment plant. Projects such as sediment toxicity testing and a sewage workshop and conference confirmed the need for sewage treatment and enable the town to access nearly \$3.5 million through the Green Infrastructure Program and other provincial and municipal funding sources to build a sewage treatment plant.
ACAP Cape Breton	Education and public awareness are important components of the ACAP Cape Breton organization. The resource centre is frequently visited by individual residents and groups. The centre provides information about improvements that can be made in day-to-day activities to care for the environment through brochures, displays and literature. The organization also engages the community through outreach environmental education in the schools, through workshops, and via television and radio broadcasting. In addition, ACAP CB is involved in a variety of remediation and conservation-related projects such as research on a rare mussel species in Blakett’s Lake, and has managed employment opportunities for local residents through the Social Research and Demonstration Corporations Community Employment Innovation Project.
Sable Island Preservation Trust (SIPT)	Sable Island Preservation Trust’s priority is the continuing conservation of Sable Island. The Trust manages human use of the island and has conducted research on resident species including Terns and Ipswich Sparrows. The Sable Island Trust monitors weather on Sable with a weather monitoring station and has researched the potential of wind-power.

Table 8 (continued)

New Brunswick	
Eastern Charlotte Waterways (ECW)	Through the water classification project, ECW developed a standard classification system for watershed quality to be used as a tool for water management. The system was documented in a guidebook which allows the system to be implemented elsewhere. The province of New Brunswick has piloted the standard and proposed a Water Classification Regulation to support watershed management.
St. Croix Estuary Project (SCEP)	A recent achievement at SCEP was the acquisition of a 330-acre parcel of land at Todd's Point, including forest, field and intertidal land. It has become the first community-owned and managed nature park and the first marine park in the area.
ACAP Saint John	Water quality is an important focus at ACAP Saint John. Projects related to improving water quality in the Saint John River and the Bay of Fundy adjacent to Saint John include education about hazardous waste disposal, the Community Environmental Monitoring Program and the Hazen Creek Habitat Restoration project. The organization has also studied the local dog whelk population as a bio-indicator of TBT contamination.
Miramichi River Environmental Assessment Committee (MREAC)	Monthly speakers forums and the annual science day conference, hosted by MREAC, are well-attended by community members, including scientists, professionals and government employees. Both fora keep community members engaged and provide them with opportunities to meet and discuss issues. MREAC has also provided local small and medium sized businesses with environmental management plans, monitored water quality throughout the watershed and reconstructed 2 wetlands to reduce bacteria contamination in the rivers from agricultural leachate.
Société de gestion de la rivière Madawaska et du lac Témiscouata	The goal of this organization is to improve quality of the environment along the Madawaska River and Lake Témiscouata watershed that spans the New Brunswick - Quebec border. Projects have included stabilization of the river banks, community education about the river's value, development and management of an inter-provincial bike path linking five communities along river, and water quality monitoring. The success of their work has resulted in a four-fold increase of some property values over the past ten years.
Newfoundland	
St. John's Harbour ACAP	St. John's Harbour ACAP has had much success in raising public awareness, and thereby increasing public pressure, in favour of establishing a sewage treatment plant in the city. The organization has educated students, service clubs and industry about the importance of sewage treatment and environmentally responsible practices that will reduce pollution in the harbour.
Humber Arm Environmental Association	Humber Arm's ACAP organization has a strong education component including static educational displays, school visits, the resource library and newspaper articles and television and radio interviews. Humber Arm has initiated an integrated coastal zone management (ICM) process through stakeholder consultations, they have developed a pollution prevention booklet for healthcare facilities and they have conducted monitoring projects such as sediment toxicity testing in the Bay of Islands.

Table 8 (continued)

Prince Edward Island	
Bedeque Bay Environmental Management Association (BBEMA)	Maple Plains Agro-Environmental Demonstration Project is a 174 -acre farm co-managed by BBEMA and a local farming family. It is used as an agro-environmental museum to showcase riparian buffer zones, wetland ponds, bog conservation, hedgerows, and a variety of sustainable agriculture practices. BBEMA also initiated and continues to support environmental farm plans whereby they help farmers identify and address environmental risks.
Southeast Environmental Association (SEA)	SEA has been engaged in monitoring the quality of water in numerous rivers since 1997 and a study on fish kill has been recognized by the OECD as a credible economic valuation of biodiversity. SEA has recently entered into a collaborative arrangement with UPEI whereby the ACAP organization will be responsible for managing the new Cardigan Water Science Centre. The centre will provide a venue for tourism activities as well as science camps.

The information contained in this table is only a small sample of ACAP initiatives undertaken since 1997; many excellent projects are not listed here. Environment Canada maintains a database of projects that have been delivered by the various ACAP organizations. In total, over 250 projects are profiled in the database for this time frame (1997-2001).

6. ACAP Windows

ACAP iWindowsî are Environment Canada Atlantic Region employees who each act as a liaison between Environment Canada and one of the 14 ACAP organizations. This is a voluntary role through which the Window helps to communicate Environment Canada’s mandate and priorities to the individual organizations, and through which Environment Canada can learn about the priorities and needs of each organization first-hand. The direct connection that the Windows provide is valuable as it allows communities to learn more about Environment Canada, and it provides a mechanism through which communities can access information and ask questions. The Window approach, unique to ACAP, contributes to what one ACAP chairman described as a nurturing relationship between Environment Canada and themselves.

7. ACAP Organization Resources: Financial and In-kind

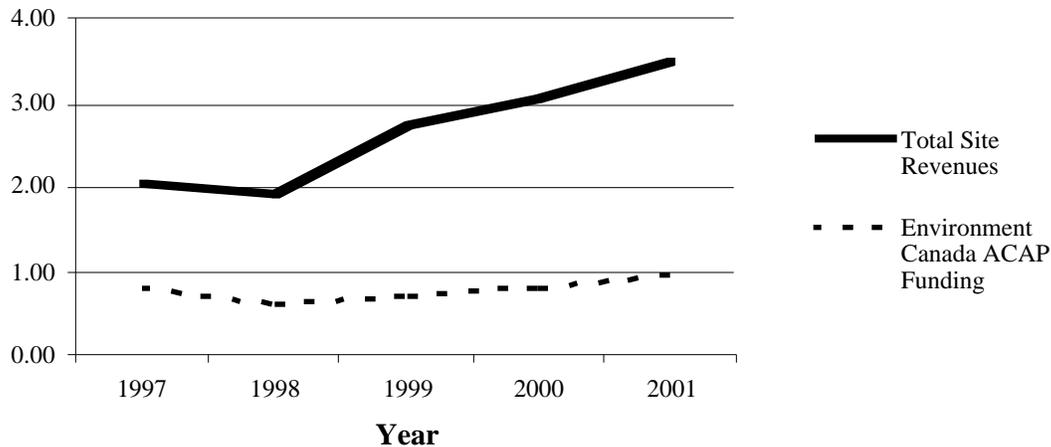
Sources of Funding

During the second phase of ACAP from 1997-2000, Environment Canada continued to be an important source of operating funds for the ACAP organizations as well as financial resources used to implement projects and activities. The growth of non-Environment Canada resources that have been attracted to ACAP organizations to support these activities has been significant. These resources can be leveraged internally and externally. Internal leveraging refers to the acquisition of resources that enables ACAP organizations to meet their management objectives through various projects. External leveraging arises when ACAP organizations act as catalysts through which other agencies or organizations help to achieve local ACAP objectives and the ACAP organizations are not directly involved in the project on a financial or prime management basis.

Internal - Cash Flow

Since 1997, Environment Canada ACAP transfers have accounted for approximately 30% of the total project funds managed by ACAP organizations. Changes in the amount of money provided by Environment Canada is notable. In 2001 Environment Canada ACAP funding accounted for 27% of ACAP funds as compared to 38% in 1997. The figure below illustrates a 1.7 fold increase in total revenues for the 14 ACAP organizations between 1997 and 2001. Total cash flow grew by nearly \$1.5 million from just over \$2 million to more than \$3.5 million in 2001. The increase in funding from Environment Canada during this same period was \$160,000..

Figure 1: Combined Revenue for all ACAP Organizations (\$ Millions)



*(Note: these values do not include in-kind contributions)

Increased funding and revenue results in part from the addition of a new ACAP organization (Sable Island Preservation Trust) in 2000, The increase is primarily a result of more significant contributions from industry, organizations and other government agencies.

There are three distinct strategies used by ACAP organizations to acquire funds:

- Collaboration with industry, other organizations and government agencies;
- Accessing funds from funding agencies; and
- Selling services as consultants on projects that are not directly related to the mandate of the organization

Cash flow, represented here by organization revenue, are funds used to pay for overhead, projects and programming. These values do not account for all the funds used in projects where an ACAP organization is an essential participant but does not administer the funds for the initiative. In some cases, ACAP organization funds are used to pay for part of a project and other sources pay for other discreet parts, such as HRDC funds paid directly to ACAP project staff. The fundraising done by an ACAP organization to purchase a parcel of land is also unaccounted for; over \$300,000 was raised for this land purchase and these funds are not reflected in the revenues illustrated above.

Volunteer and In-kind

The cash flow analysis above does not include the value of volunteer work and in-kind donations, which are invaluable sources of support for all ACAP organizations. These are rarely accounted for in accounting records.

Records on volunteer contributions and in-kind donations to ACAP organizations since 1997, as taken from the Environment Canada ACAP Projects Database, indicate the following values:

Volunteer	\$1,493,600
Land	10,000
Equipment, Office Supplies	<u>1,612,300</u>
Total	\$3,115,900

Discussions with ACAP organizations revealed that due to limitations in clerical capacity, many ACAP organizations have had difficulty tracking volunteer time accurately. Volunteer time for individual projects is rarely tracked, and volunteer time for programs is almost never tracked. In some cases, ACAP organizations have only tracked volunteer and in-kind donations for projects funded by Environment Canada ACAP support. ACAP organizations, for the most part, take a conservative approach in their financial reporting. This suggests that the value of volunteer time and in-kind support as reported in the database is underestimated. The value of in-kind contributions, such as equipment loans, is often difficult to estimate and the labour rates used to calculate the value of volunteer time (\$10/hour for a labourer, \$25/hour for a technician and \$50/hour for a professional) underestimate the true value of volunteers work.

For some ACAP organizations, the actual value of volunteer and in-kind contributions are estimated at 3-4 times the reported value and to as much as 10 times the reported value at other organizations. Without accurate tracking of this information, these values cannot be confirmed. However, it is clear that the true value of volunteer and in-kind contributions at ACAP organizations is greater than the database reports.

Adding volunteer and in-kind contributions to cash revenues would indicate a much greater value of work done of which Environment Canada-ACAP financial support represents an even smaller percentage than that shown on a cash basis.

External

ACAP organizations can also leverage resources through the provision of incentives for projects to be carried-out by external organizations or agencies. Although it cannot be fully quantified, the external leveraging effect could far surpass the total cash flow to project activities that are directly accounted for by ACAP projects and activities. ACAP activities frequently result in external leveraging and some organizations approach all of their projects as external leveraging tools. For example, one organization uses its CEMP as an external leveraging mechanism; they approach industry and other organizations and ask how, as members of the community that assisted in developing the management plan, that these groups are able to contribute to meeting the CEMP goals. Another ACAP organization enters into collaborations with the intention of reducing their support in the future. Specific examples of external leveraging are provided below.

- An ACAP driven water classification project based on water quality monitoring within the local watershed has evolved into province-wide pilot project carried by the provincial government.
- Water quality monitoring at many ACAP organizations has provided evidence of contamination from local agriculture or faulty septic systems. These results have motivated provincial governments to legislate responsible agricultural practices, encouraged organizations and government agencies to monitor water quality in adjacent waterways and prompted treatment projects for faulty septic systems.
- A sewage workshop and sediment toxicity project provided the impetus and evidence required to access green infrastructure money from ACOA and funds from other agencies to build a sewage treatment plant.

8. Challenges Associated with Community-Based Management

Several challenges associated with the community-based approach were identified during our interviews with the ACAP organizations. Limited resources have resulted in a limited emphasis on non-essential administrative tasks such as tracking volunteer time and in-kind contributions. Many funding agencies will fund discreet projects, but are less interested in funding programs or administratively-intense initiatives such as revisions to a CEMP. Education and public awareness are part of what Ellsworth *et al.* refer to as the *trinity* (community-based planning, public education/awareness building, and action) of activities that are essential to ACAP. However, it can be challenging to identify funding for education and awareness initiatives. ACAP funding is one of the few sources that allows for that extent of flexibility.

Continued participation in ACAP by the 14 community-based organizations attests to the recognition of benefits and the value of continued affiliation with Environment Canada. The demonstrated recognition by Environment Canada of the value of the community-based management and respect for the community-based process was cited an important contributor to the success of ACAP.

9. Future

There is optimism about the future of ACAP. While the primary focus, to respond to community management needs, is expected to remain the same, several organizations anticipate diversification in their roles and activities. Additional trends that may develop include increased consultancy to acquire funds, greater focus on research and development, international twinning to share experiences, focus on air quality, more regional collaboration, long-term contracts with other federal departments and land trust management. ACAP organizations are also striving to diversify their funding sources and to continue to reduce their dependence on any single source.

10. Conclusion

Based on the evidence compiled in this report, Environment Canada has obtained a substantial return on their ACAP investment and has been well-served by its support for the ACAP organizations. As seen in the Cost Analysis Section, for the department to accomplish what the ACAP organizations have accomplished via a direct delivery model Environment Canada would have incurred 12 times their current ACAP program expenditures.

<p>Economic Impact of ACAP</p>	<p>Total ACAP Organization Expenditures in Atlantic Canada, 1997-2001 (\$) Total \$13,528,500 Employment Impacts ñ Direct, Spin-off and Total (Person Years) Total 482 Person Years GDP Impacts - Direct, Spin-off and Total (\$ Millions) Total \$22,010,000 Taxation Impacts ñ Federal and Provincial (\$ Millions) Total \$8,030,000</p>
<p>Alternative Delivery Cost Analysis (Assuming full delivery by Environment Canada)</p>	<p>Total Annual ACAP Alternative Delivery Program Cost \$14,460,000 Total five Year 1997-2001 ACAP Alternative Delivery Program Cost: \$71,049,000 as compared to the \$6,100,000 that Environment Canada actually spent on the program.</p>

Given the underlying tenant of the program being community-based management, it is highly doubtful that Environment Canada could replicate the outcomes achieved through the current set of ACAP organization projects and accomplishments.

11. Reference

Ellsworth, J.P, Hildebrand, L.P., Glover, A.E. Canada's Atlantic coastal action Program: A community-based approach to collective governance. *Ocean & Coastal Management* 36:121-142.

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Appendix

EcoTec Consultants
P. O. Box 1466
Embrun, ON
K0A 1W0
Tel.: (613) 443-0435

EcoTec Consultants is a consulting firm specialized in the field of economic impact studies.

We have done over 140 economic impact studies over the last 18 years. The firm has also served as a consultant on economic impact studies to several organizations (including consulting firms in both Canada and the U.S.).

State-of-the-Art Economic Impact Models

EcoTec Consultants offers economic impact simulations using the best models available today in Canada. Dynamic and non-linear, they integrate the Input-Output (I/O) technology with econometric modules. Such an integration combines the complementary advantages of both worlds: impact by industry of the I/O models with the accuracy of non-linear estimation and the broad scope of econometric models.

Clients of EcoTec Consultants benefit from the best expertise available today, in terms of experience and methodology. Our models have been used to assess the economic benefits generated by projects such as highway construction, offshore oil and gas production, government expenditures, tourism, operations of large industrial corporations, etc. Turnaround time for simulations is generally less than 48 hours of receiving the data. Our economic impact models provide very significant advantages, including the following:

Complete Set of Impact Statistics

Our models offer open and closed simulations provide direct, indirect and induced impacts and generate the following statistics:

1. Employment and sales by industry (161 industries for national and interprovincial models)
2. Gross Domestic Product by province
3. Government tax revenues for both senior levels of government
4. Labour force: impact on the unemployment rate and the number of unemployed
5. Number of housing starts
6. Employment by occupations: over 450 occupations
7. Impact on population level

Geographical Flexibility

Our models offer unparalleled flexibility about the region of impact. We can provide economic impacts for the whole country, by province (for each of the ten provinces) or by county (within some provinces).

Accurate Estimation of Impacts

While some I/O models tend to overestimate the induced impacts (and consequently the total impacts), our models were designed so as to insure our customers that they have the most accurate results possible. Moreover, our method of calculating the employment figures is accurate and straightforward. It does not lead to overestimation and our customers do not have to deflate the employment figures.

Multi-Year Projects

Our models can do one simulation with expenditures spread over different years. For example, the client provides expenditures for the development phase of a project for several years (let's say for 1999, 2000 and 2001) and the expenditures for the operating phase in 2002, 2003, 2004 and 2005. With our model, only one simulation is needed and the software automatically adds the impacts by year from the start of the project. One single simulation can contain expenditures spread over up to 12 different years. This saves our customers time and money.

Dynamic Impacts by Year

You get the distribution of the impacts over time, for up to 15 years after the initial expenditure. As a result, it is easy to track the diffusion and the development of the impacts, per year, in the economy.

Tax Revenues

Our model calculates federal and provincial tax revenues such as: personal income tax, corporate tax on profits, indirect taxes (such as the provincial sales tax), GST, custom duties and royalties on natural resources.

Assumptions for the Alternative Delivery Cost Analysis

Organization Assumptions

- Organization costs (labour, overhead, program expenses) have been calculated as averages for small (4), medium (7) and large (3) organizations, respectively. The following list identifies how current ACAP organizations were classified.

Small (2- 4 staff)

Pictou Harbour Environmental Protection Project
Sable Island Preservation Trust
SociÉTÈ d'amÈnagement de la riviÈre Madawaska et du lac TÈmiscouata inc.
St. John's Harbour ACAP Inc.

Medium (4-12 staff)

Bluenose Atlantic Coastal Action Program
Eastern Charlotte Waterways Inc.
Miramichi River Environmental Assessment Committee
St. Croix Estuary Project Inc.
Bedeque Bay Environmental Management Association Inc.
Humber Arm Environmental Assoc. Inc.
Southeast Environmental Association

Large (over 12 staff)

ACAP Cape Breton Inc.
Clean Annapolis River Project
ACAP Saint John Inc.

Direct Salary Costs

- It is assumed that Environment Canada would require, on average, the following staffing complements to deliver programming comparable to what current ACAP organizations deliver. It is assumed that each organization would require 1 executive director (ED) and 1 secretary (S).

<i>Small Organization</i>	5 Staff (1 ED, 1 S, 1 Project Leader, 2 Project Staff)
<i>Medium Organization</i>	14 Staff (1 ED, 1 S, 3 Project Leaders, 9 Project Staff)
<i>Large Organization</i>	22 Staff (1 ED, 1 S, 5 Project Leaders, 15 Project Staff)

- Salaries and benefits consistent with Environment Canada's pay scale.
- It is assumed that Environment Canada would be able to rely on community volunteers to help deliver programs.

Direct Non-Salary Costs (materials, program and project expenses)

- It is assumed that, on average, direct non-salary costs will be approximately equal to 20% of salary costs, less benefits. This assumption was verified by comparing financial information obtained from ACAP organizations to direct salary costs

Capital Depreciation Costs

- The following table indicates the assumed annual depreciation rate of capital assets and the assumed number of capital assets for an average organization of each size.

Capital Asset	Annual Depreciation Rate	Small Organization	Medium Organization	Large Organization
Computer	0.14	3	6	10
Software	0.14	1	1	1
Furnishings	0.14	6	12	20

Indirect Costs (Overhead)

- It is assumed that indirect costs are equal to 10% of the sum of all other costs.