

Partnerships in Community-based Approaches to Achieving Sustainability: The Atlantic Coastal Action Program

F. Rousseau, Research and Liaison Officer, Environment Canada - Atlantic Region, Community and Departmental Relations, Sustainable Communities and Ecosystems Division, Dartmouth, Nova Scotia, Canada, B2Y 2N6

Colleen McNeil, Coordinator, Atlantic Coastal Action Program, Environment Canada - Atlantic Region, Community and Departmental Relations, Sustainable Communities and Ecosystems Division, Dartmouth, Nova Scotia, Canada, B2Y 2N6

Larry Hildebrand, Manager, Atlantic Coastal Action Program, Environment Canada - Atlantic Region, Community and Departmental Relations, Sustainable Communities and Ecosystems Division, Dartmouth, Nova Scotia, Canada, B2Y 2N6

***Abstract**—The Government of Canada believes that a healthy democracy requires the active engagement of its citizens in understanding the economic, social, and environmental issues faced by the nation. In the Atlantic Region, Environment Canada has been actively working, for more than a decade, on helping citizens achieve this integrated view and providing local communities with the means to develop their own visions of sustainability. In this regard, the Atlantic Coastal Action Program (ACAP) has been one of Environment Canada Atlantic Region's greatest success stories. ACAP is a community-based program that promotes local leadership and action. For more than 13 years, ACAP activities have involved thousands of community residents working as volunteers in local and regional initiatives. Their successes include solving complex problems related to sewage treatment, toxic contaminants and water quality, building local capacity and, educating their communities on issues such as pollution prevention, monitoring, climate change, assessment and household hazardous wastes to name a few. By working as a partner with local communities rather than imposing decisions, Environment Canada has helped a diversity of communities to responsibly address environmental issues of "local interest." When communities realize that they can solve some of their own problems, they are empowered and can directly (or indirectly) influence decision-makers and policy makers. All of the ACAP groups have experiences in collaborative ecosystem management that have influenced local and/or regional decision-making. This paper outlines a number of these experiences, describes ACAP and its process as well as ACAP's influence within Environment Canada and the rest of the Atlantic Region.*

Introduction

On November 4, 2002, the Canadian Government announced its financial commitment towards tri-level financing for the construction of a sewage treatment plant for St. John's Harbour in Newfoundland, Canada. This announcement was the result of many years of applied research, monitoring, educational campaigns, and numerous related efforts to influence decision-makers, conducted by a dedicated group, St. John's Harbour ACAP Inc. The St. John's group is a member of a community-based program, launched in 1991 by Environment

Canada, known as the Atlantic Coastal Action Program (ACAP). (Environment Canada 2003).

St. John's Harbour ACAP Inc. is just one of 14 organizations in Atlantic Canada, with a 15th soon to be added in Labrador, nested under the ACAP umbrella. There are two ACAP sites in Newfoundland, two in Prince Edward Island and five each in the provinces of Nova Scotia and New Brunswick. Like the St. John's group, all of the ACAP sites are dedicated toward achieving sustainability in their communities and all have experienced successes in influencing local and/or regional policy and decision-makers. A few examples of these

successes, including that of St. John's Harbour ACAP Inc., are outlined throughout this paper.

ACAP and the ACAP Communities

Environment Canada initiated the ACAP program in response to both the need to restore and sustain watersheds and adjacent coastal areas in the Atlantic Provinces and the growing public demand for involvement in decision-making related to their own environments. The main objective was to get communities involved with governments in developing restoration and maintenance plans and actions for harbours and estuaries in Atlantic Canada. The process, now in its third phase, has involved the development and implementation of comprehensive environmental management plans (CEMP) in each community, partnership building, local action and awareness projects, and the advancement of science. Originally focused on water quality issues, the program has evolved to focus on wider sustainability issues, including those of an economic and social nature.

The 14 coastal communities involved in ACAP were identified at the outset as "hot spots, or areas experiencing significant ecological degradation. The communities range in character from urban settings with heavy pollution of harbours, to areas with traditional industries associated with pollution and to areas with runoff from heavily fertilized and chemically treated farmland. In accordance with this range of character, ACAP community successes also range widely from solving complex problems related to sewage treatment, toxics and water quality, to building local capacity and educating their communities on pollution prevention, monitoring, assessment, and household hazardous wastes. ACAP accomplishments are, in fact, widely recognized and they continue to gain respect and credibility on the local, national, and international stages (Environment Canada 2003).

ACAP Phases I, II and III

In Phase I (1991 to 1996) of the program, Environment Canada (EC) provided 'core funding' to the independent, non-profit ACAP organizations, so each could hire an Executive Director, set up an office and complete their planning documents (the CEMP mentioned above) for their regions. The CEMP was the primary focus of this phase and involved a thorough investigation of the critical issues affecting local resources, an assessment of the remedial options available, and a choice of options which best served the environmental and socio-economic objectives of the community. The CEMPs, which remain central to the ACAP sites today, were intended to help guide the communities in the future management of their

ecosystem, outlining expected time frames for implementation of plans and responsible stakeholders.

For the subsequent two phases of ACAP, Environment Canada has provided annual funding to the groups for the implementation of their CEMPs. The funds are provided for work in the following areas: knowledge generation, capacity building, direct action and the advancement of science. This support helps to build the local capacity and knowledge required for communities to make informed decisions and address complex issues related to the environment.

ACAP relies on local involvement and support. While Environment Canada contributes to project funding, community stakeholders contribute most of the resources through volunteer labour, in-kind contributions, and financial support effectively levered from other federal departments, provincial and municipal governments, academia, other ENGOs, industry and local businesses. ACAP projects thus result in a variety of partnerships and these consistently demonstrate the value of an inclusive community-based approach and produce results on an ecosystem-wide basis.

Science Linkages Program

In Phase II of ACAP, a Science Linkages Program was launched to enable ACAP organizations to conduct science in partnership with EC scientists. EC developed the program in answer to requests from both the ACAP sites and the EC scientists. The sites wanted to not only take responsibility for their part of the ecosystem but to possess the skills and the information required to carry out those responsibilities; the scientists wanted the benefit of having trained volunteers helping them to fill information gaps and to do quality science. Together, the partners develop proposals, conduct scientific work of mutual interest, and report results. Since its inception in 1997, over 60 EC scientists have transferred their knowledge of scientific methods and practices to the ACAP organizations, while the organizations in turn have helped the government scientists to gather missing data, to bring partners to the table who would not normally participate with government, provided volunteer hours and, provided valuable knowledge about local science needs and ecosystems (Environment Canada 2003)

Windows

Environment Canada is in partnership with the ACAP sites and, as with all good partnerships, effective communications are a must. To ensure that participants in the ACAP initiative are always linked, Environment Canada has come up with a unique way to maintain its connection to the individual ACAP communities. While

the staff which administer the ACAP program is small, a formal link to and from each site is maintained via the “windows” approach. Windows are EC employees who sit on each community Board of Directors as ex-officio members. The windows provide a link between the groups and EC staff, as well as with other government departments. This has led to a high level of understanding and cooperative working relationships as most of the windows have been with their ACAP sites for fairly lengthy terms – some as long as 10 years. The windows provide a personal connection, which has established trust, credibility, and respect; all keys for a successful partnership (Environment Canada 2003).

ACAP’s Impact and Influence

Economic Impact

A recent study (Gardner Pinfold 2002) conducted for Environment Canada showed that having communities deliver ACAP programs costs much less than if the programs were delivered in the traditional way; through government offices and employees. Environment Canada’s total ACAP investment from 1997 to 2001 was about \$6 M; based on the analysis conducted, it would have cost the federal government 12 times that amount to directly deliver a similar internally-run program. As well, hundreds of direct and spin-off jobs are created annually throughout Atlantic Canada through ACAP. In total, the economic impact (GDP) for this same period was about \$22 M in direct and spin-off economic activity, which far exceeds EC’s original \$6M investment.

ACAP organizations are able to have such a significant impact because of their ability to secure funds from local partners, industry and other government departments. The money is invested in local communities, and benefits those same communities. A good example of the economic returns that ACAP groups can help to generate is the astounding \$4.6 million per annum that has been generated by the creation of a 63 km interprovincial linear park managed by the Société d’aménagement de la rivière Madawaska et du lac Témiscouata inc. (SARMLT) in partnership with Québec (Gardner Pinfold 2003).

Impact on Environment Canada Business Lines

Although the ACAP sites are independent organizations and basically conduct their own business, Environment Canada is a partner in each of the initiatives and thus participates in setting direction, identifying issues, and selecting the appropriate responses. Since the Environment Canada windows act as a two-way channel from EC to the ACAP sites and vice versa, they help the administrative staff in keeping the sites well informed on EC priorities and targeted results. In most cases, EC’s vision and goals for the environment align well with those of the ACAP organizations. As a result, over 1,000 community projects delivered by the ACAP organizations since the program’s inception have been demonstrated to contribute directly or indirectly to the priorities, or ‘business lines’ of the department, as follows in table 1 (adapted from Trites-Tolson 2002).

All of the ACAP sites conduct or participate in multi-partner scientific projects that link directly or indirectly to EC priorities. Bluenose Coastal Action Foundation (BCAF)’s current project, summarized below, provides an example of the type of collaboration that is helping EC, the ACAP sites and others partners meet their own priorities and mandates.

The BCAF project concerns the provision of a prototype for the development, by Nova Scotian scientists from Dalhousie University, Environment Canada and the Department of Fisheries and Oceans Canada (DFO), of a new form of coastal monitoring and management system. Their goal is to use environmental observation systems and advanced numerical models to describe physical, chemical, and biological changes in the marine environment (BCAF 2004).

BCAF’s role in the much larger project is to aid in the development and validation of bio-optical data products for use in coastal observation and prediction systems in Lunenburg Bay, Nova Scotia, as well as to develop an extensive education and outreach program for the Town of Lunenburg. BCAF personnel are responsible for an extensive water sampling program that includes the collection and analysis of water samples as well as sea-truthing samples. The collected samples will be processed by BCAF staff, and analyzed for chlorophyll and absorption by particulate and dissolved materials. Other

sampling measures include water clarity and optical properties. These are core measurements for optical observation systems that will be used in the larger project, along with remote sensing of ocean color, to monitor the state of coastal ecosystems in coming decades (BCAF 2004).

Table 1. Estimated ACAP contribution to Environment Canada Business Lines.

Business line	Estimated percent contribution
Nature	44 percent
Clean Environment	33 percent
Management and Administration	12 percent
Weather and Environmental Prediction	11 percent

This long-term project will eventually offer local fishermen accurate real-time weather and water conditions, a sound scientific basis for detecting and describing weather and climate related influences on coastal ecosystems, and it will be extremely useful when determining the effects, both short and long term, of new sewage treatment measures implemented in the Town of Lunenburg in 2003. As for meeting EC's priorities; not only has a coastal monitoring and management system been a primary area of development within its Atmospheric Science Division but, the ultimate goal of developing a modeling system for monitoring change in coastal environments is one of prime importance to the division and fits well within EC's mandate of safety and security for the Canadian public. In addition, the project offers both EC and BCAF the chance to expand and create new partnerships within the scientific and international arena.

Influence on Policy and Decision-Makers

Within environment Canada

As already mentioned, the ACAP Science Linkages Initiative was launched to better link EC scientists with ACAP organizations. In her December 2003 report on the Initiative, the author noted that "Science Linkages fosters true partnerships between ACAP communities and EC scientists whose working relationships are built on mutual trust and respect" (Dech 2003). Understandably, this mutual trust and respect had to be earned over time and was not so apparent in the early days of the Initiative. For many of the EC scientists, especially when it came to monitoring activities, there were questions of quality control, reliability of data, duplicability of tests, etc. For the communities, there was some concern that the federal government was downloading its environmental responsibilities for clean up and remediation onto them.

Effective project results, the reconciliation of diverse interests and, recognition and praise from peers and other scientists have answered many of the questions raised for both the scientists and communities and today, ACAP's success has a great influence on how many of us do business within EC Atlantic.

One of the most influential aspects of the ACAP program on EC scientists is the windows approach discussed in the introduction. EC scientists involved as windows have invariably reported that the experience has broadened their perspectives and given them, insights into the issues of importance to communities, the acquisition of skills around better ways to articulate science to citizens, and a better recognition of the interrelationships between the environment and social and economic conditions (Hildebrand 2002). It has also provided them with

partners they would not normally have worked with, and given them access to funding not normally available to governments.

As for community-based monitoring; it took a couple of years for both sides to see its benefits and potential, but it is now common for EC scientists to actively seek out the help of the ACAP organizations. Not only does volunteer monitoring supplement EC's efforts, in some cases it is the only data available for a given site. "Most EC scientists, says Hugh O'Neill of Environment Canada's Environmental Quality Laboratories in Moncton, N.B., "have a high regard for the ACAP process... but, in retrospect, many scientists did not realize the capacity that some communities had access to, ranging from university and industrial scientists and their labs and dollars, to local bird watchers." (O'Neill pers. comm. 2004).

All of the ACAP sites are involved in monitoring activities, some of them well established programs such as River Guardians, Swim Watch, and Air Watch. A number of the ACAP sites have also established their own labs to conduct fecal coliform bacterial analysis, etc. Although these labs have not been directly involved in regulatory-decision-making (in Canada, only data from "accredited" labs can be used in court cases and the cost of accreditation is just too high to be borne by most volunteer groups), EC and other organizations with enforcement mandates can and do launch their own investigation based on the sampling results obtained from the ACAP groups, as will be seen in the description of the St. John's Harbour ACAP Inc. project (page 14), which was noted in the introduction.

Environment Canada is involved in a number of ongoing monitoring programs to which the ACAP sites are regular and long-term contributors. The response from the lead EC scientists to ACAP's contributions have been invariably positive. Dr. Amar Menon, former head of EC's Shellfish Monitoring Program in the Atlantic Region, is a scientist with a high regard for ACAP and community-based monitoring. Dr. Menon has been involved with numerous ACAP volunteers (and others) in water quality monitoring where shellfish are harvested at various coastal locations in Atlantic Canada. EC's biologists provide the training and ACAP volunteers monitor and sample in local waters. Volunteers must follow very prescribed and detailed protocols and undergo regular audits (Menon pers.comm. 2004).

Environment Canada's other responsibilities under the Canadian Shellfish Sanitation Program (CSSP) include the promotion of pollution prevention and remediation of shellfish growing areas. On this front too, the ACAP sites are able allies to the scientists. Several of the ACAP communities have begun remediation and shellfish restoration activities. In Charlotte County along the Bay of

Fundy in New Brunswick, ACAP groups (working with the Premier's Clam Bed Action Committee) are active in pursuing the clean up of bacterial contamination in the area.

Remediation activities, throughout the Atlantic Provinces, have been successful in re-opening 2485 hectares of shellfish closures for commercial shellfish harvesting. This is of extreme importance for the area, where 2000 Km² of coastal waters (representing 33 percent of the classified shellfish growing area) have been closed to the harvesting of shellfish due to fecal bacterial pollution since the 1960s. Reopening of these areas for commercial harvesting could not have been done without the help of community-based monitoring and remediation projects. (Environment Canada 2004)

ACAP monitoring and data gathering capabilities are also valued by EC's Environmental Emergencies Section (EES). EES has developed a geographic information system (GIS) for the Atlantic region to provide instant environmental data for decision-making responses to the thousands of spills involving oil or other hazardous substances that threaten the coastal zone resources of the region. The need to update and add to the mapping of more than 35,000 km of shoreline is a constant one and EC benefits greatly from the willingness of ACAP organizations to collaborate in collecting new information (Laflamme pers.comm. 2004).

The first such collaboration was between EC and the St. Croix Estuary Project, Inc. (SCEP). In 2001 to 2002, SCEP collaborated with EC, through a Science Linkages project, in collecting data from the Passamaquoddy Bay area which helped in the development of a local community contingency plan for oil spill response. SCEP is unique from other ACAP sites in that it is located on an international river and represents the interests of both Canadian and American residents of the St. Croix Valley.

A similar collaboration is currently being developed between Environment Canada and the Miramichi River Environmental Assessment Committee (MREAC). Other partners include the Department of Fisheries and Oceans Canada (DFO) and a variety of provincial and municipal government organizations whose cooperation will give MREAC and EC access to some of the local information that is often the hardest to obtain. Completed web-accessible map layers (of endangered species, nesting sites, spawning areas, valuable lobster and oyster habitats, coastal marshlands, beaches, municipal and other discharge zones etc. for the Miramichi coastal zone and estuary) will prove invaluable to the Environmental Emergencies Section, to local emergency response units and to MREAC which has become a centre where community stakeholders can access information for their own uses (MREAC 2004).

Local and regional

Community-led, multi stakeholder organizations like the ACAP sites are inclusive and strive to include people who represent a cross-section of their individual communities including, citizens, business, industry, academia, non-government organizations, and various levels of government. ACAP's biggest success is probably the use and acceptance of the multi-stakeholder and community-based processes, which have shown that even established adversaries can work together when common interests are evident. The program has produced a dynamic network of relationships, joint ventures and other strategic alliances, with ACAP organizations serving as effective facilitators and brokers. The story which follows, of the St. John's Harbour ACAP Inc.'s effort to get the issue of sewage treatment on the political agenda, illustrates the effectiveness of understanding the players, forming strategic alliances, and doing good science.

Long before the Government of Canada made the financial commitment announcement to the construction of a sewage treatment plant for St. John's Harbour; the ACAP organization gathered data on the need for municipal wastewater treatment, conducted related monitoring projects, sought public consensus and sought to convince the local municipalities, the provincial, and the federal government that treatment was essential.

By 1997, St. John's Harbour ACAP had acquired the support of three local municipalities for conducting an investigation into the best way to handle the sewage problems in the local harbours. However, they needed to convince municipal officials that it would take more than a pipe extension to tackle the problem. Results of community-led bacterial monitoring did the trick and by 1999, not only were the municipalities on-side, the provincial government also joined with St. John's Harbour ACAP and the communities in clamoring for treatment. The federal government, however, was still not convinced that treatment was necessary so ACAP St. John's increased its bacterial monitoring studies through a Science Linkages project.

They monitored various fish and shellfish from 2001 to 2002, with the help of EC's Moncton lab and DFO, to determine if fish found in the Harbour proper were sufficiently contaminated to draw regulatory attention. This was followed by monitoring for chemical contamination of fish and shellfish (metals, mercury, pesticides, PAHs, PCBs, and dioxins were analyzed in lobster and flounder), some microbiological studies were also carried-out (at Memorial University) in the Harbour and nearby environment.

The monitoring results led to DFO closing shellfish and fish harvesting in the Bay (Baird pers.comm.

2004). This was a first in Canada – DFO had never before accepted community monitoring results as the basis for looking into harvesting closures. DFO’s own monitoring confirmed the ACAP organization’s results and they declared that sewage discharges were having an impact on human health. The federal government came “on board” and tri-level government funding was announced in November 2002. The contract for this project was awarded to Municipal Construction Limited in November 2003.

According to Diana Baird of St. John’s Harbour ACAP “One of the problems with government doing the monitoring in these cases is that the data tends to get shelved“, “government officials don’t seem to want to approach the media with negative results whereas community groups do.” So, according to Ms. Baird, community groups are better at getting information to the public and this leads to greater progress – “you can’t expect communities to get involved (or to support something) or to change their ways, if they don’t have the information.” (Baird pers. comm. 2004).

The discharge of raw or partially treated municipal sewage into rivers, estuaries and harbours is one of the most frequently raised issues by the ACAP organizations (and many other Atlantic community groups) and the lessons learned by the St. John’s group were of value to all and are, therefore, part of its success.

In recapping the more than eight years of struggle to get sewage treatment for the St. John Harbour area, Diana Baird had this to say about the ACAP process: “it is really the collaboration that has the value – getting all that knowledge and participation around the table was a new way of doing things...the first year was very much a feeling process, we had to establish trust... Thanks to Environment Canada, people from all sectors sat around the table to work things out...DFO has now become more open to us...And it has opened our links to local universities, to labs...we have credibility and value...We now get more and more calls from all over (EC, DFO, municipalities, etc.) for information about the Bay...scientist are coming to us.” (Baird pers.comm. 2004).

Extending the Reach of ACAP

ACAP groups not only network individually but also increasingly join-together in multi-site partnerships that have regional and national impacts. For instance, when scientists from Environment Canada’s National Water Research Institute (NWRI), Canada’s largest freshwater research facility, proposed a national strategy for monitoring and assessment of aquatic biodiversity in Canadian inland waters, one of the goals was to develop a national, volunteer-based, invertebrate stream bio-monitoring network.

ACAP sites were the primary target for network participants in the Atlantic region. In fact, in 2002, out of 17 community sites involved in the Atlantic Network, 10 were ACAP sites. It was recognized that they were already well established, very successful and had a history of working well together. In a letter to the ACAP science Linkages co-ordinator, Dr. Trefor B. Reynoldson, then leading the Atlantic portion of the program, noted that “The Institute [NWRI] sees the Science Linkages program as an important step in developing a Canadian Aquatic Bio-monitoring Program (CABIN)” (Reynoldson 2002). Four of the ACAP sites originally involved in the Atlantic Network have now banded-together, under the leadership of NWRI scientists and Acadia University, to adapt and transfer some of the bio-monitoring techniques they have learned in inland waters to estuarine waters.

The ACAP organization is “building on success’ in other ways. For instance, in addition to geographical expansion (into Labrador) and networking together to increase their collective strength, the ACAP sites are adopting and/or mentoring adjacent watersheds and neighbouring coastal areas. The ACAP approach is further evident in a number of larger Atlantic Region multi-stakeholder coalitions (some with three or four ACAP groups in the membership) organized around larger regional ecosystems (for example, the Gulf of Maine Council, the Bay of Fundy Ecosystem Partnership and, the Southern Gulf of St. Lawrence Coalition on Sustainability). ACAP’s influence can even be felt in inter-departmental and inter-governmental collaborations (working towards improving government program service delivery to communities) such as the Nova Scotia Sustainable Communities Initiatives and the Collaborative Environmental Planning Initiative for the Bras d’Or Lake in Cape Breton, Nova Scotia. These and other organizations help to ensure that the ACAP pillars of sustainability, multi-stakeholder partnerships, and community empowerment will continue to support the environmental health of Atlantic Canadian communities for generations to come.

Conclusion

Although the ACAP sites may differ somewhat in character and priorities, there are commonalities inherent in the ACAP process itself, many of which have evolved over time, and come to be thought of as “best practices.” These include the following:

- Recognizing that communities have their own vision of sustainability.
- Recognizing that governments are part of communities.

- Using a consensus model for decision-making rather than a confrontational approach.
- Seeking a balance between environmental, social, and economic considerations.
- Developing a detailed framework (the CEMP) for action based on community vision - this lets the communities identify education, monitoring, remediation and other needs through the identification of local priorities.
- Using knowledge generation activities to produce a common perspective and help inform decision-making.
- Annual funding for individual site offices and coordinator.
- “Core” funding for projects.
- ACAP community leveraging of funds and in kind resources.
- Building scientific capacity within communities through the provision of advice and technical support as well as training on proper sampling and research techniques.
- Reducing “red tape, and facilitating expertise and information exchange (for example, through “windows”).
- Measuring and demonstrating progress in research sustainability goals.
- Training and engaging local people (especially youth) to carry out monitoring and/or remediation.
- Hands on involvement among participants develops rapport, trust and new relationships.
- Using both local knowledge and traditional science.
- Sharing ownership of information to enhance confidence in its quality and increase its application, as well as to help in resolving disputes and avoiding conflicts.
- Feed back from decision-makers is essential.

In conclusion, one of the most important contributions of community-based environment management, such as that provided by the ACAP program, is the ability of the communities involved to bring to light potential and existing environmental, social and economic problems to decision-makers at all levels and in all sectors. That the participating community organizations can also be full partners in finding and helping to implement possible solutions that are scientifically defensible, economically advantageous, socially acceptable, and environmentally

sound is evidenced by the ACAP experiences described in this paper.

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