



Sustainability Indicators – Phase Two

# Adopting Sustainability Indicators into Action Planning

By the  
Southern Gulf of St. Lawrence Coalition on Sustainability

August 2006

# Sustainability Indicators Action Plan

*Please note: Each of the action items below are essentially general recommendations based on the outcome of the EcoAction funding project, 'Adopting Sustainability Indicators into Action Planning'. They are intended for consideration for future strategic or management plans by either the Coalition-SGSL or by each of the individual community groups or through a collaboration of these organizations with government or academia depending on the specific action to be taken.*

## A. Introduction

A sustainability indicator is an element of proof or a signal of the conditions that surround us. It is a tool to inform us of the state of large systems like the environment, the economy and human health. It can also inform us of sustainability at a community level.

The purpose for developing sustainability indicators is to inform and/ or influence the development of policies, programs and action plans to maintain or create a sustainable environment, culture and economy. The indicators and community discussion about them, increase public awareness and understanding about sustainability issues and help identify information gaps and research priorities for improved knowledge about sustainability over time.

The goal of the 'Adopting Sustainability Indicators into Action Planning' project was to partner with eight community groups to populate data on 17 specific indicators. This increased the capacity-building experience and understanding of the value of indicators, the community group's knowledge of interpreting data and detecting trends. This exercise was also useful in developing a multi-level action plan for the Southern Gulf of St. Lawrence Coalition on Sustainability and for each group to develop their own individual action plans.

## B. Description of 8 Participating Community Groups

There are two community groups per province involved in this project:

*Québec:*

Comité ZIP des Îles-de-la-Madeleine, Yves Martinet  
Attention FragÎles, Carole LeBlanc

*Prince Edward Island :*

Trout River Environmental Committee, Robert Sharkie

Southeast Environmental Association, David Boyce

*New-Brunswick:*

Cocagne Sustainable Development Group, Jocelyne Gauvin  
Friends of the Kouchibouguacis River, Marc-André Plourde

*Nova-Scotia:*

Friends of the Pugwash Estuary, Emma Woodlock & Alice Power  
Pictou Harbour Environmental Protection Project, Robert Christie

**Action Plan** . The 17 indicators that were evaluated are presented below. First there is a short description of the status reflected by the data that was obtained and then there are precise action items to work on for increased sustainability. The last section of this document is a recommendation section or overview of each indicator.

Education Levels	<u>Data Sources:</u> Statistics Canada: <a href="http://www12.statcan.ca/english/profil01/CP01/Index.cfm?Lang=E">http://www12.statcan.ca/english/profil01/CP01/Index.cfm?Lang=E</a>
<u>Status:</u> <i>Profile for the Southern Gulf:</i> In all 8 communities the number of people obtaining a high school diploma has increased by an average of 10.1 % between 1996 and 2001. There is also an average of 3.9 % more people with university degrees in each community, except for Pugwash which has experienced a 3% decline in university educated population. So, we can assume that the education levels are getting higher. But, further analysis shows that the average number of people obtaining a high school diploma is 5 % below the provincial averages in 2001.  <i>Community Profiles:</i>  In the Magdalen Islands there was a small decrease in people attending post secondary education. This might be explained by the increase in the tourism sector, which encourages young adults to work in this industry instead of pursuing their education.	

Action Plan:

Maintain the momentum for increased education levels:

- Work with government to continue government sponsored literacy programs and intervention for some students.
- Organize local training sessions in diverse economic industries that are important for the community's economic development. For example, agricultural training to ensure local farming initiatives or information sessions on sustainable fisheries.
- Work with provincial education departments to provide a way to access post secondary education on the Magdalen Islands and in Pugwash. This could be done by transportation mechanisms, on-line courses or by special courses coming to the community.
- Encourage government to develop programs to better suit the students who are lacking interest for academic subjects.
- Community groups could develop resource centers for young children, hosting a story hour once a month or providing resources for a local preschool program.
- Have better public transportation and high quality community services for the population that wants to live in a rural community. Employers could also allow people to work from home a few days a week to allow them to save time traveling to and from work.
- Look into the causes for the reduction in university education levels for the Pugwash community. Possibly training opportunities are not widely promoted in this community and the provincial departments could consider playing a greater role in promoting and providing training opportunities.

A possible cause of reduced university education levels could be the result of this sector of the population moving out of the community due to lack of local gainful employment opportunities. As an action item, it would be valuable to work on informing policymakers on the current status of education levels in rural communities and in order to promote changes within the employment and education departments to keep the educated workforce in the community.

Comments on process:

Education levels for the 8 communities were retrieved from «Community Profiles» on the Statistics Canada website. Data is available by census division. In communities that encompass various census divisions, the averages were found and incorporated in the chart.

Some problems were mentioned by community group members for collecting data at the census division level. For some communities, only a small percentage of the population actually live within the census division while the majority of the population lives in a small section of another census division. Thus, the data does not always reflect the exact population living within the specific community or watershed.

Also, the census divisions do not follow the delimitation of the watershed. It would be ideal to be able to obtain the data by postal code, but this process is also costly. Furthermore, postal code changes over time require considerable resources to be able to compare. However, there may be an opportunity now to collect the postal codes because, since they have recently changed, they may not again for a while.

Energy Consumption	<u>Data Sources:</u> Statistics Canada: <a href="http://oee.nrcan.gc.ca/corporate/statistics/neud/dpa/comprehensive_tables/index.cfm?fuseaction=Selector.showTree">http://oee.nrcan.gc.ca/corporate/statistics/neud/dpa/comprehensive_tables/index.cfm?fuseaction=Selector.showTree</a>
<u>Status:</u> In general, energy consumption rates per capita remained relatively the same for each province for the years 1991, 1996 and 2001. This means that either people are consuming the same amount of energy that they did 10 years ago or perhaps they consume more energy but employ more efficient technology.  The data, which was available through Natural Resources Canada, does not reflect the precise 8 communities because the data is available for the residential sector at the provincial level only.	

Action Plan:

- Community groups could partner with government agencies to monitor energy consumption per capita at the community level. They could get local statistics by conducting surveys of household electricity and other energy consumption mediums. They could initiate a database with household or per capita energy consumption per community and include this on the Statistics Canada website.
- Promote more energy efficient appliances and energy saving tips such as using clothes lines and unplugging appliances not in use. Provide consumer support and education so consumers can make more positive choices

Comments on process:

The federal department of Natural Resources provides the data relative to energy consumption. It is divided by sector: Industrial, residential, commercial, energy generating, transportation and agriculture.

We were only able to gather energy consumption statistics at the provincial level. These values were divided by the population counts for each year. These numbers may not be 100% accurate because population counts are estimates.

Economic  
Diversity

Data Sources: Statistics Canada:

<http://www12.statcan.ca/english/profil01/CP01/Index.cfm?Lang=E>

Status: In all 8 communities, more than 50% of the residents are employed in the service industry. Therefore, there is an unbalance between the service, manufacturing and resource-based activities. Current economic activities leave only 15 percent of people working in the primary sector.

The average number of people working in the primary sector is 15% for both 1996 and 2001. In the secondary sector (manufacturing), there is an 8% increase between 1996 and 2001, totaling 33% of the workforce in 2001.

In PEI there is an interesting trend away from agriculture and service industries and more towards manufacturing/ construction.

Action plan:

- Review policies that affect local initiatives.
- Work with the agencies to identify community needs that can be met by new, small local business
- Some groups could lobby to enforce stricter regulations on the use of technology in the natural resource sector due to its potential for degradation and impacts to the local labor force.
- Provide workshops and re-training for declining economic sectors, like sustainable fishing, agriculture and forestry.
- Work with experts and analysts to focus on areas where the local economy could be improved and develop action plans that do not require government subsidies.
- Encourage local enterprises for the communities to continue to grow. Identify local entrepreneurial opportunities based on input from the community.

Comments on process:

See «comments on process for Education levels». All data retrieved by census division are subject to the area being imprecisely delimited.

Life Expectancy

Data Sources: Statistics Canada

[http://www.statcan.ca/francais/freepub/82-221-XIF/01103/tables/pdf/1431\\_97\\_f.pdf](http://www.statcan.ca/francais/freepub/82-221-XIF/01103/tables/pdf/1431_97_f.pdf)

<http://www.statcan.gc.ca/english/freepub/82-221-XIE/01103/hlthstatus/deaths2.htm>

Status: Life expectancy in the eight communities is similar to the rest of Canada and is amongst the highest in the world. Between 1996 and 2001, life expectancy has increased by an average of one year. In the Magdalen Islands, life expectancy has increased by 3 years between 1996 and 2001.

Action Plan:

- Conduct further research to determine the connection between high life expectancy and quality of life.
- Target seniors with 'health and exercise' education programs.
- Promote healthy living and make exercise opportunities readily available to residents, ie.: community recreational centers, hiking trails, cycling routes, etc.
- Work with local businesses so that employees are enabled to use active transportation to get to work by providing access to showers and flexible working conditions.
- Develop policies that oblige the school system to offer healthier food.

Comments on process:

Data was readily available on the links provided. It would be interesting to see if perceived quality of life has increased proportionally to life expectancy.

Determine how many people over 80 are independent, have contact with their family, do not suffer from chronic illness.

Mode of Transport to Work	<u>Data Sources:</u> Statistics Canada <a href="http://www12.statcan.ca/english/profil01/CP01/Index.cfm?Lang=E">http://www12.statcan.ca/english/profil01/CP01/Index.cfm?Lang=E</a>
<u>Status:</u> In 2001, 83% of the working population took their own car to work, 10.25% were passengers, 5% used their bicycle and 2 % walked to work. In all communities there is no public transportation.	

Action plan:

- Encourage carpooling by creating a website with travel schedules for people who want to travel outside of the community. This way people would have a useful networking system to know when and how to carpool.
- Build roads or paths that are suitable for bicycles and install sidewalks or larger road shoulders for better safety.
- Encourage energy conservation policies and subsidies for fuel efficient cars, hybrid vehicles and small cars.

Comments on process:

Data is available on the *Community profiles* section of the Statistics Canada website. This indicator is only available by census division for 2001. So, we can't observe any trends over time.

Annual Population Changes and Population Density	<u>Data Sources:</u> Statistics Canada <a href="http://www12.statcan.ca/english/profil01/CP01/Index.cfm?Lang=E">http://www12.statcan.ca/english/profil01/CP01/Index.cfm?Lang=E</a>
<u>Status:</u> Dundas, Trout River, southeast Prince Edward Island and Cap-aux-Meules are experiencing a small increase in population while Magdalen Islands, Kouchibouguacis watershed, Pugwash and Pictou have declining population.	

Action Plan:

- In instances where communities are growing, a community plan should be considered so that population density is centralized, putting less stress on other land uses such as agriculture, less stress on infrastructure needs such as roads and postal services etc.
- For the communities experiencing a population increase, community planning statements should include planning mechanisms to protect natural assets that sustain the community.
- An option for maintaining community population could be to provide training in sectors of the economy that could contribute to a diverse population staying in the community. An example would be a sustainable fisheries or a farming course in the peninsula.
- Encourage policies that favor local enterprises instead of large corporation.
- Develop public transportation and quality services to attract people to these communities. Insure flexible working conditions in order to let rural populations work from home.
- Create quality child care in a rural setting that enables very young children to properly start on the path to learning---good pre school programs, access to books etc.
- Keep land taxes affordable for local residents so that they continue to be able to purchase properties in their home communities.

Comments on Process:

Data was available through Statistics Canada website on the *community profiles* section. The same challenges of area delimitation and accuracy were encountered for this indicator. See comments for education levels for more detail.

Boil Water Orders	<u>Data Sources:</u>  SEE COMMENTS
<u>Status:</u> <p>The data retrieved by the provincial departments does not cover well water supplies. The data is only available for municipal drinking water supplies. This is a problem since the eight communities are rural areas where private wells are the primary source of drinking water.</p> <p>In PEI the data has not been updated since 2004. This is of concern, because data is not consistently monitored and it is difficult to see trends.</p> <p>In New Brunswick, this summer, the Department of Environment is offering free testing of well water. There should be a report at the end of the season that would be of interest.</p>	
<u>Action Plan:</u> <ul style="list-style-type: none"> <li>• Provinces should consistently document boil water orders or contaminated wells to observe trends and place the data in a public database.</li> <li>• Well field protection strategies need to be implemented and legislated. NB has one that might be assessed by other jurisdictions. It also has a regulation on surface water drinking water supply.</li> <li>• Develop community outreach programs to educate the public on the impact of various wastes on drinking water supply.</li> <li>• Assess ways to encourage homeowners to increase the frequency of water quality testing</li> <li>• Reduce administrative and bureaucratic delays on urgent environment matters in order to reduce the amount of pollution that reaches the watershed.</li> <li>• Implement or enforce policy that obliges the polluter to clean and restore the damage at its own cost.</li> </ul>	

Comments on process:

Data was obtained by contacting provincial government officials. The contact people are as follows:

*Nova Scotia:*

Christina L. Mosher, N.S. Environment & Labour. Water and Wastewater Branch  
5151 Terminal Road, 5th Floor. P. O. Box 697. Halifax, NS B3J 2T8  
Tel: (902) 424-2565  
Fax: (902) 424-0503  
Email: [moshercl@gov.ns.ca](mailto:moshercl@gov.ns.ca)

*New Brunswick:*

Ivan Brophy, NB Health and Wellness. Email: [ivan.brophy@gnb.ca](mailto:ivan.brophy@gnb.ca). Phone: (506) 453-2536. Website: [www.gnb.ca/public/info-e.asp ...](http://www.gnb.ca/public/info-e.asp...)  
[www.safewater.org/BWA/BWA-NB.htm](http://www.safewater.org/BWA/BWA-NB.htm)

*Prince-Edward Island:*

Morley Foy, P.Eng.  
Approvals & Compliance Engineer  
PEI Department Environment, Energy and Forestry  
Water Management Division  
11 Kent Street, PO Box 2000, Charlottetown  
Prince Edward Island  
C1A 7N8

E-mail: [mmfoy@gov.pe.ca](mailto:mmfoy@gov.pe.ca)  
Tel: (902)-368-5036  
Fax: (902)-368-5830

*Québec:*

André Beaulieu  
Ministère du Développement durable,  
de l'Environnement et des Parcs  
Responsable de la coordination et des communications  
Région de la Gaspésie-Îles-de-la-Madeleine  
Téléphone (418) 763-3301, poste 226  
Télécopieur (418) 763-7810  
Courriel [andre.beaulieu@mddep.gouv.qc.ca](mailto:andre.beaulieu@mddep.gouv.qc.ca)

Land use Patterns	<u>Data Sources:</u> Statistics Canada: <a href="http://www.statcan.ca/english/freepub/95F0301XIE/tables.htm">http://www.statcan.ca/english/freepub/95F0301XIE/tables.htm</a>
<p><u>Status:</u></p> <p>The only land use data that was available from Statistics Canada free of charge was agriculture statistics.</p> <p>The data shows that PEI communities use an average of 40% of their land for agricultural purposes. In the other communities, the percentage is much lower. For example, in the Magdalen Islands, only 3% of the land is used for agriculture. In Kent county, the percentage of land used for agriculture is 5%. For Cumberland and Pictou county, the percentages of the land used for agriculture are 16 and 10.6 %.</p> <p>The data for this indicator is only available for 2001.</p>	

Action Plan:

- Perform detailed documentation and GIS for land-use. Document how much land is developed in the buffer zone of the coastline or of rivers. How much land is occupied by forest, rivers, and development?
- Develop management plans for the region in order to preserve the region's natural capital.
- Identify the number of agriculture lands using Best Management Practices or Environmental Farm Plans. Also, identify the number of woodlots under Forest Stewardship Council or other certification programs.
- Enforce the rules and regulations currently in place to conserve ecologically important land areas.
- Include the need for food production in rural development management plans.
- Create partnerships between agriculturists and property owners for the use of vacant agricultural land. This could permit agriculturists to increase their production and by consequence, offer local employment.
- Offer training adapted to the region and increase local products and the professions that are attached.

Comments on process:

The only land use data that was available from Statistics Canada free of charge was related to the agriculture industry. This was made available at the county level. On-site monitoring of land use patterns would be useful. This could be done with GIS and would display the amount of land that is being used for various activities.

Protected Lands	<u>Data Sources:</u>  SEE COMMENTS
<u>Status:</u> The amount of protected lands has been increasing, which is a positive sign.	

### Action Plan

- Support government initiatives to purchase ecologically significant land in order to protect it.
- Make sure that the provinces attain their goal to have 7% of land protected provincially, dependent on habitat type and the amount of contiguous property.
- Enforce or develop coastal policies in each province and allow local residents to ensure that those laws and regulations are being respected.

Comments on process:

The data was obtained by consulting the 8 groups involved in this project and by contacting the various conservation groups and government such as:

Island Nature Trust,  
P.O. Box 265  
Charlottetown, Prince Edward Island, Canada  
C1A 7K4  
Telephone: 902.892.7513  
Fax: 902.628.6331  
E-Mail: [intrust@isn.net](mailto:intrust@isn.net)

NB department of Natural Resources: <http://www.gnb.ca/0399/index-e.asp>

PEI Department of Energy, Wildlife and Forestry:  
Rosemary Curley  
Natural Areas Biologist  
Forest, Fish and Wildlife division  
902-368-4807  
[frcurley@gov.pe.ca](mailto:frcurley@gov.pe.ca)

Nova Scotia Department of Environment and Labor  
<http://www.gov.ns.ca/enla/protectedareas/>

Laurel Bernard  
Stewardship Coordinator - Atlantic Office  
Nature Conservancy of Canada  
924 Prospect St., Suite 2  
Fredericton, NB E3B 2T9  
Tel: (506) 450-6010  
Fax: (506) 450-6013  
[www.natureconservancy.ca](http://www.natureconservancy.ca)

For Québec the information was found in: Les statuts de protection aux Îles-de-la-Madeleine. 2003. Compte rendu de *l'atelier d'information et de concertation* tenu le 5 mai 2003.

Esther Noël de Tilly  
Coordonnatrice  
Société de Conservation des Îles  
418-986-3152

Forest Age Structure	<u>Data Sources:</u>  SEE COMMENTS
<u>Status:</u>  In PEI, most of the forest is at an age, by industry standards, to be ready for harvest. There are also a considerable amount of young trees. The trend is of concern because there needs to be more old trees in some stands to maintain a healthy biodiversity level.  In Pugwash, the main objective of forestry is pulp production. The forest is sustainable for the current objectives. But, more land should be set aside so that all species can be regenerated.  In the Magdalen Islands, there are practically no young trees.	
<u>Action Plan:</u> <ul style="list-style-type: none"><li>• Certification programs should be more widely known so they can be adopted</li><li>• More contiguous forested land needs to be protected.</li><li>• All wood sold for lumber should be from FSC woodlots.</li><li>• Encourage tree plantation and/or regeneration</li></ul>	

Comments on Process:

Data was retrieved by contacting provincial authorities:

P. Jon Hutchinson  
Inventory Forester  
P.E.I. Dept. of Environment, Energy and Forestry  
Forestry & Resource Modeling Division  
P.O. Box 2000  
Charlottetown, P.E.I.  
C1A 7N8  
Telephone - 902-368-4707  
Fax - 902-368-4713

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Ken Snow  
Manager Forest Inventory  
Nova Scotia Dept. of Natural Resources  
PO Box 68 Truro NS  
B2N 5B8

Tel: (902) 893-5710  
Fax: (902) 893 6102

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Michael McDonald  
Forest Inventory/ Natural Resources  
506-453-2516  
[Michael.McDonald@gnb.ca](mailto:Michael.McDonald@gnb.ca)

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Robin Lefrançois, tech. f.

Division des compilations  
Direction des inventaires forestiers  
Ministère des Ressources naturelles et de la Faune  
880, chemin Sainte-Foy, 4e étage  
Québec (Québec) G1S 4X4  
Téléphone : (418) 627-8669 poste 4319  
Sans frais: 1 877 9FORÊTS poste 4319  
Télécopieur : (418) 646-1995

<p>Consumer Price Index</p>	<p><u>Data Sources:</u></p> <p><a href="http://www40.statcan.ca/102/cst01/econ150a_f.htm">http://www40.statcan.ca/102/cst01/econ150a_f.htm</a></p> <p><a href="http://www12.statcan.ca/english/census01/products/analytic/companion/inc/canada.cfm#6">http://www12.statcan.ca/english/census01/products/analytic/companion/inc/canada.cfm#6</a></p>
<p><u>Status:</u> Consumer price index is rising while average family income is declining. Families are struggling more financially due to inflation.</p>	
<p><u>Action Plan:</u></p> <ul style="list-style-type: none"> <li>• Increase the training programs and the diversity of the local economy to allow for less pressure on the primary resources of the area.</li> <li>• Focus on local markets to supply local needs</li> <li>• Encourage affordable, sustainable energy use and products to reduce energy costs for households.</li> </ul>	
<p><u>Comments on the Process:</u></p> <p>The average family income by province is compared to the provincial inflation rate. Both sets of data were found on the Statistics Canada Website.</p>	

Particulate Matter in air	<p><u>Data Sources:</u> <a href="http://www.etc-cte.ec.gc.ca/napsstations/main.aspx">http://www.etc-cte.ec.gc.ca/napsstations/main.aspx</a></p> <p>Kerri Henry Senior Indicator Specialist National Indicators and Reporting Office Environment Canada (819) 994-1295</p>
<p><u>Status:</u></p> <p>The data trends for the Moncton and the Pictou monitoring stations show increasing pm 2.5 levels in the summer months, but they remain well under the health safety threshold.</p> <p>Air quality is not monitored at the community level for Pugwash and Îles-de-la-Madeleine.</p> <p>Monitoring is being done for Prince Edward Island, but the data will only be available in mid September 2006.</p>	
<p><u>Action Plan:</u></p> <ul style="list-style-type: none"><li>• Create an opportunity to partner with various federal and provincial agencies in order to create a community-based air quality monitoring net.</li><li>• Promote active transportation and carpooling</li><li>• Have better regulations on firewood and woodstoves to reduce Particulate matter emissions.</li><li>• Maintain the pm levels instead of letting them increase.</li></ul>	
<p><u>Comments on Process:</u></p> <p>The data is available on the Environment Canada website. Once on this site, the information is obtained by clicking on the area of choice and then on 'click to plot trend data'. Choose a pollutant and years for which you want the data and press 'show graph'.</p>	

<p style="text-align: center;">Amount of Waste delivered and diverted at Landfill</p>	<p><u>Data Sources:</u></p> <p>Municipal landfills in each community (See Comments)</p>
<p><u>Status:</u></p> <p>The New Brunswick landfill (Westmorland Albert Solid Waste Commission) could not be reached in order to obtain information. We do not have data for that indicator in N.B.</p> <p>Cumberland Waste Commission began to monitor their waste in 2001.</p> <p>Îles-de la-Madeleine began monitoring the amount of waste in 1993. The amount of waste incinerated has dropped by 57% due to increase recycling programs.</p> <p>PEI incorporated mandatory waste separation in 2002 – at which time they begun to monitor their waste.</p> <p>Pictou began monitoring waste in 2000. Waste delivered and diverted remains stable for the 5 years of monitoring.</p> <p>Status indicates that monitoring and separation initiatives are on the rise.</p>	
<p><u>Action Plan:</u></p> <ul style="list-style-type: none"> <li>• Community groups could measure per capita or per household waste production by conducting surveys and by working with municipal landfill sites.</li> <li>• Maintain increasing waste diversion. One method could be to allow a maximum number of garbage bags for pick-up.</li> <li>• Enforce waste separation programs for enterprises as well as residential waste. Implement sanctions whenever there is non compliance.</li> <li>• Encourage minimal packaging with food manufacturers.</li> </ul>	

Comments on the process:

The information for each community was obtained by contacting municipal landfills in each community.

Cumberland Joint Services management Authority  
Solid Waste services  
P.O. Box 549  
Amherst NS  
B4H 4A1  
Phone: (902) 667-5141  
Fax: (902) 667-5873  
e-mail: [solwaste@cjsma.ns.ca](mailto:solwaste@cjsma.ns.ca)

Heather Chowens  
Disposal Manager  
Island Waste Management Corporation  
110 Watts Avenue  
Charlottetown, PEI  
C1E 2C1  
(902) 368-5033  
Fax: (902) 894-0331

Carol Mackenzie  
Phone: (902) 396-5062  
Fax: (902) 396-4782  
E-mail: [carolmackenzie@pcwastemgmt.com](mailto:carolmackenzie@pcwastemgmt.com)

Sales of locally produced goods	<u>Data Sources:</u>
<p><u>Status:</u> No data is available for this indicator because information related to sales is, in most cases, confidential. And also, there is no database or mechanism to track this information consistently throughout the communities.</p> <p>Community groups and local farmers are very interested by this information and think that it is important information for the sustainability of each region. Some groups have expressed an interest in collecting this data themselves in the future.</p>	
<p><u>Action Plan:</u></p> <ul style="list-style-type: none"> <li>• Ask local farmers to provide the percentage of their harvest that remains in the community compared to the percentage exported.</li> <li>• Develop a measurement tool and a database integrated with local farmers markets to monitor sales of locally produced goods.</li> <li>• Assess local production and local needs</li> <li>• Work with the community to promote the consumption of locally produced goods instead of imports.</li> </ul>	
<p><u>Comments on the Process:</u></p> <p>Data for this indicator is not documented, but there is interest in obtaining this data in each community. It will then be in each community's work plan to initiate activities in sectors where improvement is needed. For example, if there are 5 cranberry producers but no carrot producers, consideration should be given to developing a balance to meet each community's needs.</p>	

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<p style="text-align: center;">Area of Shellfish Closures per Year</p>	<p><u>Data Sources:</u>  <a href="http://www.atl.ec.gc.ca/epb/sfish/maps/nb/nb_f.html">http://www.atl.ec.gc.ca/epb/sfish/maps/nb/nb_f.html</a>   <a href="http://www.glf.dfo-mpo.gc.ca/fm-gp/cp-cp/ord-ord/index-e.html">http://www.glf.dfo-mpo.gc.ca/fm-gp/cp-cp/ord-ord/index-e.html</a>   <a href="http://www.glf.dfo-mpo.gc.ca/shellfish-coquillages/map-carte.asp?panmap=w&amp;Language=en">http://www.glf.dfo-mpo.gc.ca/shellfish-coquillages/map-carte.asp?panmap=w&amp;Language=en</a></p>
<p><u>Status:</u></p> <p>In each of the eight communities, some areas are closed to shellfish harvesting. The data available on the Fisheries and Oceans Canada website indicates that the number of shellfish area closures tends to increase over time. This needs further analysis because in some cases closures are seasonal or are closed because they cannot be tested. In some instances closures are around sewage outfalls.</p>	
<p><u>Action Plan:</u></p> <ul style="list-style-type: none"> <li>• Encourage technology development for better sewage treatment processes and enforce septic tank regulations.</li> <li>• Develop community outreach programs and inspections so that private septic systems are better maintained.</li> <li>• There should be community involvement in determining areas to be tested for shellfish harvesting in order to obtain the best possible economic and sustainable advantage from this renewable resource.</li> <li>• Promote alternative sewage treatment facilities like artificial wetlands for example.</li> </ul>	
<p><u>Comments on the process:</u></p> <p>Data was obtained by looking at the shellfish harvesting prohibition orders on the department of Fisheries and Ocean's website.</p>	

## **E. conclusion**

### **Education Levels:**

Education levels in the eight communities are rising, but remain under the provincial averages. The communities have only small percentages of people with university degrees. But, there are 9.6% more people who have completed their high school diploma in 2001 than there were in 1996.

Groups view this as a positive sign because it allows the community to be more knowledgeable about sustainability issues. Education levels are also tied to better resource management practices because it means that people have resources beyond meeting their basic needs. Also, because they have more education, communities can better manage their resources because they have a better understanding of best management practices, ecosystem function, conservation, etc.

The growing percentage of people with trades and college certificates also show that people are being more and more educated in the secondary sector. This is good to maintain the young population in the community.

### **Energy Consumption**

Energy consumption is a good indicator to monitor any changes in improved household energy efficiency. This is why it is important to have more specific data. The available data reveals that the consumption rates are constant throughout the provinces. But, it would be interesting to monitor either total energy consumption or electricity consumption per community and observe any changes following the action plan.

### **Economic Diversity**

A balance or a more even dispersion of employment between the three sectors can actually serve as a protective shield for our natural resources. For example, people working in fishing are not going to let others pollute the water extensively because it would ruin their livelihood. The same thing goes for the forest industry. When making decisions, policymakers often try to implement policies that do not hinder other industries.

### **Annual Population Changes and Population Densities**

Depending on the location, some communities experienced increasing or decreasing population density. It's up to each community to determine their population objectives for sustainability.

### **Life Expectancy**

Life expectancy has increased by an average of one year throughout the southern Gulf. However, increased life expectancy does not necessarily mean that people have increased quality of life, a factor which can be considered more important than longer life.

### **Mode of Transport to work**

People are using their own cars for traveling to work instead of carpooling, walking or biking. Effective strategies to encourage people to carpool, walk or bike are needed in these rural communities.

### **Boil Water Orders**

There is a need for an accessible database with the results of well water tests and municipal drinking water monitoring to effectively analyse trends and to share data within groups and with the public.

### **Land Use Patterns**

Communities have expressed the need to have more detailed data on the activities that are taking place in their watersheds in order to make sustainable management plans for the future.

### **Protected Lands**

More and more land is being designated as protected areas, which all community groups feel is a positive trend to sustain the region.

### **Forest Age Structure**

Community groups find that forests are currently sustainable from an industry perspective, but there should be more regulations on preserving forestland to support natural habitat.

### **Consumer price Index**

Inflation is rising faster than the average family income. This places emphasis on the need for rural communities to strategize to create local production and consumption.

### **Particulate Matter in Air**

In Pictou and in Moncton, particulate matter levels of less than 2.5  $\mu$  are below the threshold for statistically significant health effects to occur, which is estimated to be 15 $\mu$ /m<sup>3</sup> by some experts. Other experts say that there is no documented safe level of exposure.

### **Waste delivered and diverted at the landfill**

Waste diversion is increasing, but the amount of waste generated remains constant or tends to rise.

### **Sales of locally produced goods**

A consistent approach to monitoring the sales of locally produced goods is needed in order to assess the needs of the community and its production capacities.

### **Shellfish area Closures**

Shellfish area closures seem to be increasing over time. Groups have expressed that they would like to encourage technology development for better sewage treatment processes and enforce septic tank regulations