

The Humber River Basin Human Values Project: Designing a Sampling Strategy for a Pilot Survey in the Corner Brook Area

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Sustainability can be indicated by a number of factors. Populations need to be aged evenly, ensuring a healthy equilibrium. Job opportunities must be numerous and of wide varieties to balance incomes from different employment sectors. Regions must also sustain vital natural resources in the area which are directly related to a place being self-sustaining. These indicators prove to be true, especially in Newfoundland, where people have struggled to remain in the small traditional communities that they consider being their 'home.' The population of Corner Brook and the surrounding areas can be stratified according to the values people hold to their special place. Even though people in western Newfoundland hold strong ties to their home, some parts of the region struggle with unemployment, low incomes, out-migration, and dependency on declining natural resources. The aim of this paper is to present the process of designing a sampling strategy for a human values pilot survey conducted in the city of Corner Brook. It will present a theoretical background about choosing a sample and will develop a dynamic population profile for Corner Brook over the period 2002-2006 to be used for the sampling strategy.

Introduction

For the independent project, the Humber River Basin Project is designing a sampling strategy for a human values study. The human values study is a component of a research project initiated by Natural Resources Canada, Corner Brook, entitled Ecosystem-based Management based in Humber River Basin. The reasons for involvement vary. Experience will be gained with survey development and implementation, along with field experience in social science survey data collection. Through analyzing collected data, those things people value in their environments, research ethics involving humans, and the research process in a collaborative environment will be acquired.

The paper intends to present the process of designing a sampling strategy for the human values survey with a focus on the pilot survey conducted in the city of Corner Brook during March 2011. Presented, is a theoretical background about choosing a sample and a dynamic population profile for Corner Brook over the period 2002-2006 will be developed. This will serve for the development of the sampling strategy and sample stratification.

Methodology

In order to stratify a sample for the Humber River Basin (HRB) project, it is important to distinguish between the different types of people living in the region. Different groups of people will hold values, lifestyles and occupations unique to their preferences to live the best quality of life possible. The HRB values study will help stratify between people who live the traditional Newfoundland way of life, and those who are possible newcomers to the area, and do not hold intrinsic connections to the sustainability fabric of the region. The focal point of my research

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revolves around the Western Newfoundland Model Forest study, published in 2002, which provides much information about population, employment, income, human capital, poverty and real estate – dated with information from 1986 to 1996. The study also measured community sustainability indicators, providing perspectives of many different values residents in Western Newfoundland hold. By comparing this information to the data obtained online from the 2006 Community Accounts (Corner Brook and Surrounding Area, 2006), it is possible to develop a comparative analysis to understand how trends have changed or remained the same into more recent years. By using this analysis technique, future trends can be hypothesized to predict future sustainability for the western region. It is also important to understand what can contribute to make an area sustainable.

The values survey aims to provide background information to decision-makers on public values, perceptions and attitudes toward natural resource and environmental issues in the Humber River Basin. The information collected will help distinguish important human values within the Humber River Basin and lay a foundation for conducting longitudinal studies in the future.

Before distributing a survey across the entire Humber River Basin area, a pilot survey was conducted in the Corner Brook/Curling area. The purpose of the pilot survey was to find ways to improve the survey. For example, if communication issues arise with specific questions, wording can be improved to develop more concise or clear questions.

The pilot survey also aimed to establish the average length of time necessary to discuss the questions with the respondents. The information from the pilot survey will be used for establishing the number of people needed to conduct the survey and approximately how long it will take to implement the HRB survey.

The World Values Survey (WVS) was reviewed as the starting point for the development of the Humber River Basin Human Value Survey. The WVS first emerged in 1981 out of the European Values Study – a successful European study which included 14 countries. The WVS survey covered the state of sociocultural, moral, religious, and political values of different cultures in 22 countries worldwide. The initial implementation of the surveys was lead by Ronald Inglehart from the University of Michigan in the United States. There are 5 waves of questionnaires, and the most recent consist of about 250 questions that are administered to about 1,400 people in every country.

Questions from the WVS helped develop questions for the survey, pertaining to environmental and resource use values. The pilot project was initiated in order to establish content validity. Questions may have to be added or discarded, depending on the information collected during the pilot survey.

The main area of interest concerns the design of a sampling strategy. This procedure involves finding out which people, of the entire population of Corner Brook, will be surveyed. The main methods for designing a sample will involve randomization and stratification. The region of Corner Brook was broken down into 21 neighbourhoods in the Community Accounts (Corner Brook and Surrounding Area, 2006) which were used for sample calculation, randomization and stratification.

Theoretical Prerequisites for Sampling

There are three principles of sampling according to Firebaugh (2008). The first principle states that the whole ox does not need to be eaten to know that it is tough (Firebaugh, 2008). There is a population of about 20,000 in the city of Corner Brook. To get environmental and resource value information from the people, we must pick a group of people that represent the values of everyone. Interviewing everybody in Corner Brook would yield accurate results, but it is not plausible. Clearly, choosing a study sample is an important step in any research project since it is rarely practical, efficient or ethical to study whole populations (Marshall, 1996). The aim of all sampling approaches is to draw a representative sample from the population, so that the analysis of the sample study can be generalized back to the population (Marshall, 1996).

The second principle states that, how cases are selected for a sample, is more important than how many cases are selected (Firebaugh, 2008). Finding a sample of people that will represent the views of the whole population is very important. Therefore, the people chosen to be interviewed must be selected properly. The sample must be randomized such that a biased data collection does not occur. Basically, a sample group of a few hundred from a population in the millions can paint a good picture, as long as the sample is representative (Firebaugh, 2008). The size of the sample is determined by the optimum number necessary to enable valid inferences to be made about the population (Marshall, 1996). The larger the sample size, the smaller the chance of a random sampling error, but since the sampling error is inversely proportional to the square root of the sample size, there is usually little to be gained from studying very large samples (Marshall, 1996).

The last principle of sampling is that the sample must permit powerful contrasts for the effects of interest (Firebaugh, 2008). We are interested in environmental values, so we must interview both people who care for the environment and people who are not so much environmentally interested. There are questions in the survey that will allow us to stratify groups of people with varying interests. Stratified groups of people can be studied to look for similarities or differences, and to draw conclusions about the entire population.

The Sampling Strategy

To achieve high reliability, large sample sizes are required (Barrera, Amador, & Clark, 2006). In order to obtain the minimum sample for the pilot survey, the calculated percentage for each of populations in the 21 different regions of Corner Brook represented in the total population. These percentages were multiplied by 150 (the number of people we wanted to test) and then found out the minimum number of surveys for each region. The minimum sample could also be found if a minimum sample calculator available online. There are sample calculators online which help you choose a minimum sample for any project. These generators require inputs of confidence levels, population sizes, margins of error, and response distributions to give suggested sample sizes. For a confidence level of 90% and a confidence interval 7% with a 50% proportion, the minimum sample size obtained was 138. These surveys will allow us to analyze relationships between different variables. These relationships include similarities in worldviews and lifestyles, or comparisons between opposing environmental values and income. Sometimes data collections are labour-intensive and adequately trained individuals are insufficient (Barrera,

Amador, & Clark, 2006). Sometimes survey studies require the obtainment of large amounts of data. Because large samples are needed to eliminate sampling errors, groups of people have to work together to collect information from populations.

The city of Corner Brook is made up of 21 neighbourhoods, according to data in the Community Accounts (Corner Brook and Surrounding Area, 2006). Community Accounts is an information database on the internet that explores the well-being of the people of Newfoundland and Labrador. To get the minimum sample of 138, each street in every neighbourhood was assigned a number, and numbers were placed into a hat. For the streets that were chosen, the first resident with a vehicle in the driveway was the dwelling to be surveyed. This is a common approach used to define a sample. In a random sample, the nature of the population is defined and all members have an equal chance of selection (Marshall, 1996). Stratified random sampling and area sampling are variants of random sampling, which allow subgroups to be studied in greater detail (Marshall, 1996).

Unfortunately, the random sampling strategy had to be discontinued, which was the result of ethics clearance and safety issues. The administrators of the pilot project were not clear on which organization would need to assume liability. The problem relates to multi-institutional collaborative research and has yet to be resolved.

The process of the random sampling is well defined – that is, a developed method to find out how many and which residents were going to be sampled. There are problems with random samples, which relate to the aim of the study (Marshall, 1996). Studying the random sample provides the best opportunity to generalize the results to the population but it is not the most effective way of developing an understanding of complex issues relating to human behaviour (Marshall, 1996). We may be able to extract a general idea of people's concerns over environmental problems and values, but this information may lack smaller factors that are tied into the apparent issues. As a result, a complete picture is not painted.

The sample of the pilot project is representative for the information wanted for analysis. Because our sample is relatively small compared to the entire population of Corner Brook, the sampling error of such a small number is likely to cause biases that are inevitable (Marshall, 1996). Also, for a true random sample to be selected, the characteristics under study of the whole population should be known. Understanding the demographics, income, consumption, leisure, employment, working conditions, education, literacy, training, and community safety of Corner Brook was made possible with the databases on Community Accounts. As a result, factors were able to be analyzed that may shape the values of many residents.

Random sampling of a population is likely to produce a representative sample only if the research characteristics are normally distributed within the population (Marshall, 1996). There is no evidence that the values, beliefs, and attitudes that form the core of qualitative investigation are normally distributed, making the probability approach inappropriate (Marshall, 1996). Because the sample chosen for the HRB project study was a generalization of the values for Corner Brook, it cannot be assumed that everybody's beliefs lie close to the generalization. Again, the sample is representative, but it may not complete the entire picture regarding the complexity of intermixed issues. By developing a dynamic population profile for Corner Brook overtime, changes in occupations, incomes, resource availability, migration, and birth/death rates can be compared to develop explanations for changes in society which can help researchers infer people's values.

It is recognized by sociologists that people are not equally good at observing, understanding and interpreting their own behaviour and other people's behaviour (Marshall, 1996). Sometimes informants are 'richer' than others and these people are more likely to provide insights and understanding for the researcher (Marshall, 1996). An example to explain how someone may hold valuable information compared to others is asking someone at random how to repair a broken down car, rather than asking a garage mechanic (Marshall, 1996). The random person may have an idea on how to fix the car, but the mechanic will likely be more productive (Marshall, 1996).

If native Newfoundlanders were asked about their values and perspectives on the province's environment and resources, they will provide relevant information about the region, because they have experienced first-hand the changes in environmental quality over time. If the same qualitative question were asked to someone who has recently moved into Corner Brook, their information will not be as rich as the former person's. The respondents in the HRB project were chosen at complete random, so the chances of surveying a native resident or a newly settled resident are the same. It is likely that people with valuable information will be surveyed, but some surveys are equally as likely to be filled out by someone with little attachment to Newfoundland and its resources.

In order to complete the surveys, the project switched from a door-to-door collection to a shopping mall sample. Tables were set up in the mall which gave residents opportunity to take part in the study. By switching to the malls, instead of door-to-door, the liability rests solely with the students as part of the pilot project. Traveling around Corner Brook with students raises issues of liability, in case someone was to get hurt. When the group set tables to gather information from a 'convenient sample' in a public mall, the school was no longer liable.

Convenient sampling is the least rigorous sampling technique, which involves the selection of the most accessible subjects (Marshall, 1996). It is also the least costly to the researchers in terms of time, effort, and money (Marshall, 1996). As a result, a convenient sample may result in poor quality data that lacks intellectual credibility (Marshall, 1996). For the HRB pilot project, the convenience sampling helped complete the surveys, but usually a more thoughtful approach to selecting a sample is usually justified (Marshall, 1996). It is interesting that in the mall most of the people interviewed on a Saturday were not from Corner Brook but from places like Pasadena, Stephenville, and Deer Lake. In a normal week day most of the shoppers were from Corner Brook.

Corner Brook Population Profile (2002-2006)

In order to develop the Corner Brook 2002-2006 population profile a report by Otter/Beckley entitled "This is Paradise" was used (Den Otter & Beckley, 2002). The data in this report were compared with the 2006 data in the Community Accounts. The Otter/Beckley report was conducted in Western Newfoundland in 2002. It uses two different social indicator approaches for analyzing data. These include objective measures and subjective measures. Objective measures take Canadian census data and compare them to both quantitative and qualitative data that reflect socio-economic conditions in smaller communities. This can let researchers know how unemployment rates and incomes in Newfoundland communities compare

to the rest of Canada. The subjective assessment which is the result of surveying the people shows a contrasting picture to the objective indicators (Den Otter & Beckley, 2002).

The Otter/Beckley study found that even if the rates of unemployment are high, incomes are low, and many families live below the poverty line, people are committed to the region and try to make a living from a variety of sources. Many are apparently willing to trade off income and income-earning potential for other aspects of the quality of life they feel is unique to the region (Den Otter & Beckley, 2002). This just goes to show that some residents hold intrinsic values for their community or region – they value it for itself. In the HRB pilot project, it can be assumed that Newfoundlanders appear strongly attached to their region, and this attachment will factor significantly in the future sustainability of the region and the communities that comprise it (Den Otter & Beckley, 2002).

Newfoundlanders, academics, and governments strive to develop the island into a sustainable province (Den Otter & Beckley, 2002). In the light of the collapsed cod fishery, resource dependency and exploitation outlines the province's marine resources, as the province witnessed dramatic ecological and social changes. In 1968, Newfoundland experienced a peak in cod catches, extracting more than 800,000 tonnes of cod from the ocean (Davis, Whalen, & Neis, 2006). In the years to follow, Newfoundlanders experienced depletion of the cod resource which resulted in lost jobs and decreases in traditional ways of life. In 1992, the famous cod moratorium was called and Newfoundlanders experienced drastic social changes. This event is not confined to the decline of marine resources, but reflects a trend of resource dependency and exploitation (Den Otter & Beckley, 2002).

During the 1950s and 1960s, the government instituted a program to relocate Newfoundlanders to larger centers because the cost of servicing communities was high and few people were able to find employment. This reflects early indications of how Newfoundlanders lived unsustainable. This relocation is controversial as regards to the social consequences. To more explicit; in 2002, people still chose to live in their smaller communities and endure high unemployment, low incomes, and significant out-migration as a result of their dependence on a declining resource (Den Otter & Beckley, 2002). However, there are some that have since adjusted to fishing crustaceans. In November 2010, Kim Olson spoke to the Environmental Studies seminar class regarding a voluntary closure of the lobster fishery. The idea of a voluntary closure was presented because of declining stocks of the lobster resource. People who fished the Bay of Islands prefer to see the lobster numbers grow to a healthy level again, and for some, a closure of the fishery would help achieve this goal. This example shows decreasing dependence on a declining resource. The fishermen in western Newfoundland would have to find another means to make a living while the crustacean fishery is temporally closed.

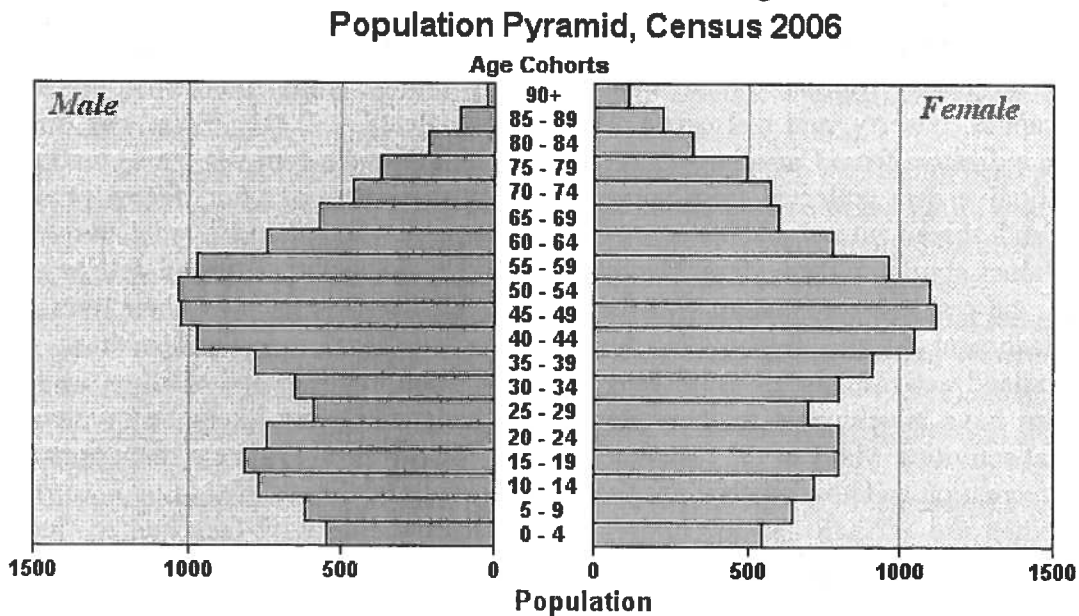
In 2006, unemployment, incomes, and migration levels proved to reflect a changing trend compared to data gathered in 2002. Unemployment rates in Corner Brook and surrounding areas in 2002 averaged 24% between males and females. Compared to levels in 1986 (26.5%) and 1991 (27%) (Corner Brook and Surrounding Area, 2006), unemployment has been slowly decreasing over time. In the 2006 community accounts profile (Corner Brook and Surrounding Area, 2006), unemployment dropped to 14.4%, reflecting an overall improvement. Participation rates have increased from 56.5% in 1996, to 72.3% in 2006. The increase in participation is due mainly to higher numbers of females, as the level of employed males stayed relatively the same.

Participation rates are the number of people who are working or actively looking for work – excluding people who are retired or who have given up the search for work.

Concerning income, people in western Newfoundland have experienced average increases in gross income since 1996. In 1986, average income was about 33,000 dollars/year in the Western Newfoundland Model Forest area. Income averages increased to about 35,000 dollars/year in 1991 (Corner Brook and Surrounding Area, 2006) – reflecting higher yields in the marine industries. The collapse of the cod fishery can be seen by drops of incomes, most noticeable in smaller communities such as Lark Harbour and Rocky Harbour. In 1996, Western Newfoundland’s average income dropped to about 25,000 dollars/year which reflects the dependence on the declining cod resource. Corner Brook also experienced a decrease in income, but not as great as smaller communities, while Pasadena actually experienced an increase of income from 1991-1996. Since 2002, western Newfoundland experienced a steady increase of incomes, and in 2006, the trend continues. Personal income per capita has also steadily increased since 1992, indicating improvements in well-being. Per capita income is the numerical quotient of income divided by population. It is a measure of all sources of income in an economic aggregate, such as a country or city. It does not measure income distribution or wealth.

In western Newfoundland, population increases have only been noticed in Pasadena. Corner Brook, Lark Harbour, and Rocky Harbour have all seen declining populations averaging a -5.6% decrease from 1991-1996. The province as a whole experienced a population decrease of -2.9%, and this trend still continues today. Since 2001, the western population of 24,870 has increased by 1.5% to about 25,245. The trend of the population, however, shows a steadily decreasing population over the last 20 years. The population pyramid for the western Newfoundland area in 2006 also reflects a decreasing population showing a majority of the population clustered around the age of 50, and smaller proportions in the younger age groups. This shape in population pyramids symbolizes a decreasing population (See Figure 1).

Figure 1: Population pyramid for the Corner Brook and surrounding area.



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Birth and death rates can be used to describe the causation for declining populations. Birth rates in western Newfoundland have remained fairly steady in recent years, but experienced dramatic increase in 2008. The reason for this was that money was provided to parents who had children born since January 2008. The Parental Support Benefit provided a 1000 dollar lump sum to resident mothers who gave birth and an extra 100 dollars/month for the first 12 months (Corner Brook and Surrounding Area, 2006). The government provides this grant as an attempt to increase the younger section of the population, which will increase the population in general through demographic momentum. The number of births in 2009 was 225 births in Corner Brook and surrounding area, showing a 11.8% decrease since 2008 when there were 255 births. The 2009 birth rate is still higher than 2006 and 2007 were birth numbers were steady at about 205 births.

Death rates have also increased over the past 6 years, except for 2009, when there were 235 deaths in Corner Brook and surrounding area. This is a 6.0% decrease since 2008 when there were 250 deaths. The recent high death rates can be related to health issues in the western area, which are mostly associated with cancer, respiratory issues, circulatory issues, and digestive problems (Corner Brook and Surrounding Area, 2006). These issues were more common in the older age groups in Corner Brook (61+ years of age).

The Otter/Beckley report defines sustainability as survival and as dynamic change that does not destroy the environment and the community. It is necessary to use the resources available for human consumption and survival, but the limitations of the environment is very important. Sustainability requires more than just having enough resources for future generations to consume. It also requires that economies and social systems be maintained and allowed to flourish (Den Otter & Beckley, 2002). Newfoundlanders have a strong sense of connection and identity to their home. Because people hope to see their communities flourish, much attention has been allotted to Newfoundland sustainability issues. Resources have been used by Newfoundlanders for many generations, but after instances such as the cod collapse, people are aware that resources are delicate.

One of Newfoundland's most valuable resources is the forest. In 2002, the Western Newfoundland Model Forest (WNMF) interviewed people in Corner Brook, Pasadena, Lark Harbour, and Rocky Harbour to assess sustainability through: population, employment, income, human capital, poverty, and real estate (Den Otter & Beckley, 2002). What was found is that objective indicators from Canadian census data fail to reflect the complex social reality of place. The qualitative data collected from surveys suggest that there is a fair degree of community identity and shared norms and values within western Newfoundland (Den Otter & Beckley, 2002). Values similar to these should be reflected in the HRB pilot study, and will be related. For example, the residents of western Newfoundland are quite satisfied with their lives and feel a deep attachment to the region. In the pilot survey, some questions address traditional Newfoundland activities, such as: fishing, snaring, game hunting, and visiting the forest. For those who have attachments to their community, they will most likely be involved in such traditional activities. Many of the respondents in the WNMF study spoke of the opportunities for outdoor recreation and how much it positively affects their quality of life.

When the WNMF had to choose indicators for their study, they had to find ways to effectively choose appropriate ones. They found that having a number (i.e. income) does not necessarily mean it is a good indicator (Den Otter & Beckley, 2002). Personal experiences from

the interviewees were necessary to infer sustainability issues in the region. People who were attached to their communities had a stronger environmental awareness because they care for their environment. These people were therefore representative. The indicators chosen must also be presented in multiple ways to show a comprehensive and balanced perspective. Single indicators are only snapshots of life in a community and should not be taken as reality (Den Otter & Beckley, 2002).

For the WNMF study, only six main indicators (population, employment, income, human capital, poverty, and real estate) were chosen because too many indicators can confuse people and distract from the bigger picture. This list is kept short to focus on some of the most relevant issues in sustainable communities. Clearly, comprehensiveness may be the enemy of effectiveness (Den Otter & Beckley, 2002).

Another important consideration for a values survey is that people must care about the problems addressed. Many people consider sustainability issues, so the work is useful to local industry, Model Forest partners, politicians, and communities (Den Otter & Beckley, 2002). The HRB values survey underwent multiple revisions before the finalized copy was finished. The revisions involved developing a concise, user friendly survey that addressed the relevant required information. The final draft of the survey (appendix 1) reflects many traditional ways of life – something that will interest Newfoundland respondents. Also addressed in the survey, is what people consider to be issues regarding sustainability in the region. If respondents feel responsible to address their town's issues, then their responses prove useful to analyze.

The population as an indicator proved to have several implications for sustainability. Generally, people are attracted to resource-dependent communities because good jobs are almost guaranteed. This can lead to a transient community where workers pass through for seasonal work and do not contribute to a sense of community (Den Otter & Beckley, 2002). Unemployment and raised poverty levels can result in the community if resources are downsized or diminished. This can also apply to long-term residents who may be forced to migrate from the community if they cannot find work in the area. For the HRB values survey, a transient community may not provide us with residents who have strong connections with their regions valuable resources. If sustainability is not promoted with the way resources are allocated, traditional ways of life will decrease, which will result in a switch from traditional lifestyles – which is how Newfoundlanders prefer to live (Den Otter & Beckley, 2002).

At the same time, newcomers or foreign immigrants may have interesting perceptions of the area they recently moved into. This can provide clear stratifications of our entire sample, and give us a variety of opinions /views concerning sustainability. Foreign immigrants also have the capability to change traditional Newfoundland ways of life if their numbers increase.

Since the cause of the declining populations cannot be explained only by increasing birth and death rates, it proves relevant to look at the migration rates in the western Newfoundland area. Migration rates have generally increased since 1986 to 2006 (11.8% - 13.7%), meaning that people are moving into and out of the area. Migration levels were highest in 1991 for Newfoundland, reflecting the effects of the cod fishery collapse.

Because populations of western Newfoundland have experienced decreases (i.e. negative population changes) over the last 20 years, emigration is clearly more prominent than immigration. The population of Newfoundland has also faced decreases in numbers, as the tendency is for residents to leave the island, in search of better employment opportunities. There

may be percentages of immigration to Newfoundland, but the rates will be low compared to native residents leaving the island. For example, in 2006, the net-migration rate in Newfoundland was -0.6%. This represents a loss of about 3000 individuals. In either situation, however, traditional Newfoundland life is being diminished.

It is also relevant to sample a balanced age distribution. Retirees provide a valuable source of income for communities but they can also be a drain on community resources. Young people represent the potential of a place, but only if they stay in the community and contribute to its well-being (Den Otter & Beckley, 2002). Different age groups will provide contrasting values within the surveys and this proves to be useful when obtaining a representative sample. In 2009, birth rates increased because of grants provided by the government. This increase in a younger generation will prove to be beneficial to the Western Newfoundland economy, if the young people stay in their native region.

Employment measures are commonly used in a variety of studies because of their importance to community well-being. Healthy communities should exhibit high levels of employment and labour-force participation, equal for both sexes, in a diverse array of sectors. People who cannot find work in an area will likely leave the region in search of work elsewhere (Den Otter & Beckley, 2002). For communities with viable resources, this can be problematic if changes occur due to global market forces, or if the markets for the resource disappear or become unavailable (Den Otter & Beckley, 2002).

It is also important to examine whether men and women have equal access to the job market (Den Otter & Beckley, 2002). In resource-dependent communities, women are often relegated to low-paying positions in service and administrative professions and are excluded from the higher paying resource jobs (Den Otter & Beckley, 2002). In Corner Brook, females typically dominate the health and education sectors, while males mostly have jobs in management and construction. However, some variety exists within the 21 neighbourhoods of Corner Brook, indicating a healthy employment spread. In the Georgetown road area for example, females occupy a majority of management positions, while males occupy these positions in most other neighbourhoods. Another trend worth noting is that sales and office jobs are weighted on females. Sales jobs tend to support a lower salary, indicating an imbalance among the job sectors. Concerning the HRB project, the Corner Brook employment sector may not be perfectly balanced, but the availability of jobs will promote sustainability. A sustainable employment sector increases the chances of surveying the representative residents.

A problem facing Corner Brook in the coming years is whether the pulp and paper mill will remain open. Currently, the mill, university and the hospital are the main employers in Corner Brook. Figuratively speaking, the closing of the mill would leave hundreds of people without employment, which would lead to increased levels of migration away from Corner Brook. Families forced to leave Corner Brook may hold true values towards many aspects of the city, as they have likely lived there for many years. Therefore, an economically diverse community with employment balanced in several sectors will likely be more sustainable (Den Otter & Beckley, 2002). Female participation rates were lower than male participation rates during the 1986-1996 period, as males worked more jobs females did. In 2006, female job participation increased to a rate where they dominated in health, office, education, and sales/services sectors. This is an indication of improved gender occupation balance.

It is obvious that Newfoundland was severely affected by the northern cod moratorium of 1992. Many believe that Western Newfoundland maintained stability because of the jobs provided by the pulp and paper mill (Den Otter & Beckley, 2002). Even if the mill were to close, it is believed that a variety of other job opportunities would sustain the region (Den Otter & Beckley, 2002). One interviewee in the WNMF study believed that if the mill shut down, the town would probably limp along. The hospital in Corner Brook employs more people than the mill, and Barry's fishing in Curling employs about 400 people. Corner Brook also hosts jobs with Grenfell Campus and The College of the North Atlantic. The job options in western Newfoundland differ compared to 30 or 40 years ago (Den Otter & Beckley, 2002). This interviewee believed that Corner Brook will be able to survive, but there would still be a very large impact. People who have confidence in the survival of Corner Brook clearly have strong values attached to Newfoundland. These optimists would provide valuable information for the HRB values study.

Of course, there are people who believe the contrary. When someone in the WNMF study was asked about Corner Brook's future if the mill closed, that respondent stated: "A ghost town in 5 years." (Den Otter & Beckley, 2002) Another respondent believed that Corner Brook would be badly hurt if the mill closed, and would lose at least 5000 people (Den Otter & Beckley, 2002). These people believe that a recovery from the mill closure is uncertain, and impacts would be felt up and down the western Newfoundland coast. A sustainable region is questionable in some people's opinion, and their perception of western Newfoundland could prove interesting for the values study.

Outmigration continues to be a problem for the western area, and could become worse if a major sector in the region is shut down. However, as the Den Otter & Beckley report mentions people have traditionally been able to do well cutting their own wood, and having friends to help build their own home (Den Otter & Beckley, 2002). For those who have always self-sustained their families, moving off the island would be difficult. Prior to being forced to move for new job opportunities, people often own their own home, hunted rabbits and moose, had a garden, cut their wood, and did not have other skills for the job market. For these people, relocating is a change of the norm and is not desired (Den Otter & Beckley, 2002).

Currently, many people are satisfied with the way the mill operates, and feel that there are not many health risks associated with the mill. There was one concern raised about the environmental impacts of the mill and how it might affect other opportunities such as domestic cutting or tourism (Den Otter & Beckley, 2002). Forestry harvesting impacts on the landscape are believed to affect people's ability to hunt, fish, and collect firewood. People also believe that having a single large mill discourages a diversity of forest uses. Increases in technology are also thought to have damaging consequences to the forests, similar to the consequences seen in the fishing industry (Den Otter & Beckley, 2002).

For one resident, his perception of the mill had both negative and positive components. On the positive side, he believed that the mill is looking after its harvesting and wood operations and recognizes that there's a right for the rest of the province to access the forest for other uses, such as hunting and fishing (Den Otter & Beckley, 2002). As for the negative component, he believed that the areas that the companies go in to harvest look like disaster zones. This could be a problem for the tourism sector in Newfoundland because when people go into areas for recreation, they have to witness the altered landscapes (Den Otter & Beckley, 2002).

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Another resident considered the forests a place for livelihood. For some workers, the forest may provide a job at the mill, which provides a salary and well-being. For others, the forest provides logs to build and heat your home. The person working a mill job will need money to support his/her family lifestyle, but the traditional Newfoundlander needs the forests to access fuel, building materials, and to gather food (Den Otter & Beckley, 2002). Many Newfoundlanders consider the traditional lifestyle to be a better quality of life. People who hold strong values to the land can provide the HRB project with valuable information regarding current environmental problems. For the people interviewed during the values pilot project, it seemed that not so many people valued a traditional way of life. A possible explanation for this was that most of those surveyed were from Corner Brook, a small city. It is possible that the percentage of people who value a traditional way of life is lower in the more developed society of Corner Brook. Once the survey is distributed among the entire western Newfoundland region, people living in smaller communities may show more interest in traditional ways of life.

Protecting the forests for tourism, or to maintain traditional lifestyles is very important. Each is a major component of the sustainability of Newfoundland. In almost every interview in the WNMf study, tourism was mentioned as one of the best ways to diversify the local economy (Den Otter & Beckley, 2002). The beautiful features of the western region and the praise that tourists hold for the area are well recognized. Further developing of facilities in Newfoundland is thought to hold great potential for the tourism sector. Sustainability is achievable if technology-intensive projects are avoided and labour-intensive and smaller businesses constitute future development (Den Otter & Beckley, 2002). For example, the construction of wooden houses, laid out like they would have been years ago and Newfoundland traditional-style restaurants would be positive additions for the tourism sector.

Clearly, people believe that Newfoundland faces issues because of harsh settings, high taxes, an unskilled labour force, and competition from other economically depressed regions (Den Otter & Beckley, 2002). If Newfoundlanders moved away from urban development, and lived more in a self-sustaining society, then the Island could have the potential to exist sustainably. These ideas appear to be interesting topics for the values study. As the Den Otter & Beckley report noted:

“Freedom from debt, tight social networks, and ecological knowledge are all aspects that persuade people to remain anchored to the western Newfoundland region. The traditional style of life in Newfoundland allows people to thrive without the benefit of a vibrant market economy” (Den Otter & Beckley, 2002, p. 14).

Unfortunately, these aspects do not translate into other provinces and countries (Den Otter & Beckley, 2002). In 2002, if someone was forced to move, they would not be able to sell their mortgage-free home for very much money. This does not prove to be true anymore, as house prices went up due to low supply. They will also be abandoning dense social networks, and local ecological knowledge may not be transferrable to new locations. There are many people believing that Newfoundlanders have the resiliency and adaptability to weather current problems in the wake of the collapsed fishery, and develop a better future (Den Otter & Beckley, 2002). These are all important concepts regarding a meaningful values study for the HRB project.

High household incomes will also exhibit positive employment conditions. People want to have a decent lifestyle by making a salary that permits a good quality life. For many, it is important to make this salary in the region in which they live. Income distribution is also relevant, because it is important to know if either men or women are making the most money, or if one employment sector is making better incomes than another (Den Otter & Beckley, 2002). An unhappy worker may have less respect for nature, potentially leading to negative views towards sustainability. The average male fulltime salary in western Newfoundland during 1996 was \$38,553; for women it was \$24,380 (Den Otter & Beckley, 2002). Women's salaries were on average only 63% of the salary of males in Newfoundland, and 71% of male incomes in the rest of Canada (Den Otter & Beckley, 2002).

Since 2002, income has increased equally for males and females and in 2006, the trend continued to increase. However, female incomes are still below that of males, which has always been a characteristic of median incomes. In 1996 for example, the majority of incomes ranging from 1000-14,999 dollars/year were obtained by females. The higher incomes from 15,000-50,000 and over were dominated by males. This is a substantial difference that may be an area of concern for women in the HRB communities. Some women in Corner Brook may feel positive about improvements in their incomes, but others who will be answering the survey may have more pessimistic views towards environmental values, compared to higher paid males. Therefore, females in smaller communities living a more traditional life style may prove to be highly representative for the values survey.

Another important fact is that incomes in western Newfoundland were on par with the average incomes of Newfoundland from 1986 to 1991. After 1996, incomes in the western region dropped far below the average of the island. The changes brought by the cod moratorium are apparent because many people in small fishing communities in western Newfoundland lost their jobs and livelihood in 1992. The difference of incomes is shrinking however. In 2006 the average family income in Corner Brook and surrounding area was 70,900 dollars/year while the average family income in the province was 69,200 dollars/year. Income balance is improving among the residents of Newfoundland but comparatively, the income on the island is lower than in the rest of Canada. The national income per family was about 90,000 dollars/year, indicating an employment sector with higher paying jobs. For Newfoundland, this indicates that there are still proportions of people who live the self-sustaining lifestyle.

During the WNMF study, respondents agreed with statistics that indicated women with fewer job opportunities than men. Women interviewed stated that because of the role of women in the past, a patriarchal attitude still exists in the province (Den Otter & Beckley, 2002). Sometimes, women are viewed as not having the same work capacity and skills as their male counterparts. This view is pervasive throughout the history of the province and has deep historical roots (Den Otter & Beckley, 2002). Today, this discrimination in the employment of women is a characteristic of Canada as a country.

A male interviewee recalled life from years earlier, during the traditional way of life, and said that while his father was out fishing long hours, his mother did just about everything else. She would cook and clean for the children, and do all the other household tasks (Den Otter & Beckley, 2002). During those times, the mother would also cut wood, maintain the garden, and make clothes. Despite the fact that there was always work and cleaning to be done, the mother would always manage to find food for everyone. The man finished by stating that Newfoundland

communities would never have survived without women. Although this way of life has mostly been present in earlier Newfoundland years, finding 'stay-at-home' mothers could prove valuable regarding information about environmental values.

Compared to smaller communities, Corner Brook offers higher and more stable incomes provided by the pulp and paper mill, the hospital, the school district, and other major employers. Compared to the province of Newfoundland and Labrador, unemployment rates in Corner Brook were lower because of increased opportunities in these areas (Den Otter & Beckley, 2002). Lark Harbour and Rocky Harbour are both well under national averages. People living in lower paid areas will have less optimism about sustainability, as the people living there may consider their community to lack vital resources.

Human capital in the WNMF study measures the collective ability of a community to anticipate and respond to changes that may come from outside the region (Den Otter & Beckley, 2002). Human resources were measured in the study by the level of educational attainment. If citizens are better educated, they will have the ideas and tools to build sustainable communities (Kremer, 1993). The different neighbourhoods in Corner Brook had varieties of education. Some neighbourhoods such as Petries and Curling west hosted high percentages (approx. 20%) of people without a high school diploma, while other areas such as Farmdale Road and Curling East had higher percentages of high school, university, and college graduates. It can be expected that higher education levels will help the region become more sustainable in the use of its natural resources.

In 1986, 40.8% of the population of western Newfoundland had a high school diploma and 25.3% did not. In 1996, 39.2% had a high school diploma while 17.8% did not. What's noticeable during this 10 year period is that relatively the same amount of people have been getting a high school diploma, while the number of drop-outs has been declining. Back in 1986, it was common for people to drop out of school and become fishermen or to help out the typically large families (McCarthy, 1981). In 1996, this proved to be less common, as less people did not have a high school diploma.

In 2006, the number of people with a high school diploma in western Newfoundland was slightly higher than the province as a whole (80.9%, compared to 74.9%). The percent of people without a high school diploma in the western region (19.1%) is lower than the provincial average (25.1%). Recent data shows that more people tend to finish their high school, but there is still a proportion that does not (Community Accounts, 2011). Western Newfoundland is improving its educational attainment, indicating a potential for sustainable communities.

Furthermore, in 2006, 15.7% of people aged 18-64 in Corner Brook and the surrounding area had a university degree or higher. For the province, 13.3% of the same age group had a bachelor's degree or higher. Back in 1996, only 6.9% in western Newfoundland had a degree and 8.1% of the entire province had a degree. This is proof that the population of Newfoundland and Labrador is becoming better educated.

It is also worth noting that the school enrolment for all grades in the Corner Brook-Pasadena area has been steadily decreasing over the past 20 years. The total number of students in the school year 1989-1990 was 7202, while in 2011 it is only 4205. The region may show higher percentages of people with education compared to the province, but the number of students from kindergarten to grade 12 has been decreasing, demonstrating a decreasing

population. With the addition of the 'brain-drain' phenomena, the educational attainment of the western Newfoundland population could possibly fall in the coming years.

People living in poverty do not have adequate incomes to live comfortably in resource-dependent communities. If the number of people living in poverty is higher than the number of people who do not, then the overall well-being decreases (Den Otter & Beckley, 2002). Sometimes competition for jobs is high, and some simply cannot find work. Sustainable communities should offer the opportunity for all people to cover expenses (Den Otter & Beckley, 2002). People living in poverty inside Corner Brook may feel financial pressures because of declining forest resources in their area. These people will therefore feel negatively about sustainability in Corner Brook. The results will differ greatly from people who live in poverty, compared to those who are financially wealthy. However, some of the lower income areas in Corner Brook such as Broadway and Mount Batten Road have experienced increases of income in recent years – a sign of survival and dynamic change.

There are many people who believe that other areas in western Newfoundland actually have few people living in actual poverty. People in the WNMF study disagreed with the statistics showing large segments of the population living below the poverty line. The study showed that people consider the numbers were deceiving because of the lower cost of living and the variety of ways Newfoundlanders supplement their income (Den Otter & Beckley, 2002). There were people, however, that acknowledged that the problem is greater than many people in the region would like to believe. Low-income conditions are not readily apparent because there are no obvious good or bad sections in many small communities (Den Otter & Beckley, 2002). In 2006, the self-reliance ratio for Western Newfoundland was 80.4%. This is a measure of the community's dependency on government transfers such as: Canada pension, Old Age Security, Employment Insurance (EI), income support assistance, etc. A high self-reliance ratio indicates a lower dependency. Therefore, dependency on EI and other transfers prove to be low for Corner Brook and surrounding areas.

An interviewee for the WNMF study said that in Newfoundland money goes a lot farther than it does in more populous provinces in Canada (Den Otter & Beckley, 2002). Again, traditional values became apparent in residents' views as this particular respondent said that Newfoundlanders do not pay as much money to have a home because they build it themselves. To help with construction, many relatives work together to assemble various components for a suitable home. Newfoundlanders also are allowed to hunt a moose each year, so they keep meat in the freezer all winter (Den Otter & Beckley, 2002). Developing a lifestyle in this way proves to be sustainable because the family will help make use of the resources provided to accomplish well-being. These people believe that Newfoundland is capable of supporting lower-income families, disproving some of the hardships of poverty. At the same time, however, if Newfoundlanders are depending on nature for survival, it is mandatory that nature is protected.

In reality, poverty exists in Newfoundland, and some people are very aware of it. Corner Brook, for example, does have one major low-income housing section, but the area does not stand out as lower in stature compared to the rest of the city (Den Otter & Beckley, 2002). In places such as Lark Harbour, people living in smaller houses are forced to live next to people who are much wealthier.

One interviewee in the WNMF study remained positive about poverty levels and sustainability in Lark Harbour. The resident believed that there were many professionals in Lark

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Harbour, such as doctors and lawyers (Den Otter & Beckley, 2002). Because a diversity of jobs classifies a region as being sustainable, people will remain optimistic about living in western Newfoundland, while trying to keep poverty at a minimum. However, an interviewee in Corner Brook singled out that people living in the low-income housing lack proper nutrition, clothing, and money for various activities (Den Otter & Beckley, 2002).

To compensate for people who are less wealthy, obtaining education is seen as a positive solution to poverty (Den Otter & Beckley, 2002). After the collapse of the fishery, effort was placed by the provincial government on retraining people who no longer had professions. The desired outcome of this strategy was to allow the people who wanted to stay in Newfoundland to remain there (Den Otter & Beckley, 2002). Over time, diversity of educational opportunities grew in the region, as young people were encouraged to sustain the local job market. This was a positive statement for Newfoundlanders, but in the long run, smaller Newfoundland communities were at a disadvantage because a majority of people left their home in search of job opportunities and education (Byron, 2003). This left the populations of fishing towns smaller and older than they already were. This demographic trend can still be seen today, as the bulk of the population is around 55 years of age.

With new schooling programs available, focus switched from the traditional way of life, to conditions where people had to make money to survive. One interviewee in the WNMF study pointed out that this change was artificial – not the result of increased demand for education (Den Otter & Beckley, 2002). As students obtained different forms of education, they left Newfoundland in search of careers in other parts of the world. This outmigration proves to be drastic for the Newfoundland economy, because strictly speaking, education is only useful if it can be applied in the community (Den Otter & Beckley, 2002).

Some people in western Newfoundland feel that too much emphasis is placed on getting university training or college trades (Den Otter & Beckley, 2002). Many believed that it is more important to have a variety of skills such as carpentry, fishing, and hunting. The attempt to make Newfoundland sustainable by increasing education proves to be more damaging to the economy in the eyes of the residents in the region. There are many people who think like this which would provide useful information in the HRB values study.

As some regions experience 'boom-and-bust' phenomena with the available resources, the demand and prices of those resources can sometimes fluctuate (Den Otter & Beckley, 2002). These fluctuations can be reflected in real-estate values as people move in and out of the community as a result of employment trends. This is a sign of turbulence and unsustainability. Many Newfoundlanders are concerned with values for their homes and differences can exist between how an owner values a home, and what it is actually worth. Stable real estate proves to be an indicator of sustainability, and if resources are also stable, then people will have positive feelings towards the environment (Den Otter & Beckley, 2002). If more new houses were built, then the demand for homes can be balanced.

Unemployment rates in Newfoundland have generally been higher than unemployment rates in Corner Brook. Some regions of the WNMF, including Rocky Harbour, Pasadena, and Corner Brook, have experienced significantly higher unemployment rates in previous years (Den Otter & Beckley, 2002). As a result, the population in these areas has been gradually declining. In order for communities to survive, there must be ample access to jobs. In communities such as Lark Harbour, the number of people who look for work and cannot find it remains much higher

than for the province as a whole. With serious downturns in the fishing industry, people had to give up a traditional way of life to find work elsewhere (Den Otter & Beckley, 2002). The unemployment rate in Corner Brook looks a little better, only because of the greater diversity of employment possibilities. The sustainability of the fishing sector in Lark Harbour has decreased, and so has the number of people who feel strongly attached to their way of life in the area (Den Otter & Beckley, 2002). Surveying these people who still struggle in the fishing sector will yield interesting results in the HRB values survey.

A sustainable community with a striving economy will have high demand in the labour market. Education, therefore, proves to be an indicator of a healthy community (Den Otter & Beckley, 2002). Higher education levels in communities suggest that people will have the necessary skills for today's job market. Corner Brook and Pasadena have similar numbers of overall graduates as the rest of Canada and slightly more than the province (Den Otter & Beckley, 2002).

Lark Harbour has considerably lower levels of education, with less than a quarter of the population obtaining at least a high school diploma and no university degrees (Den Otter & Beckley, 2002). These numbers suggest that people lack the necessary skills to work a variety of jobs, which would lead to an unsustainable community. As some resource sectors diminish, and others emerge, individuals adjust their human capital accordingly. Increasing school attendance provides evidence that local residents recognize the need for education to meet the labour demands of the economy, provided that they stay in the province. It would prove to be very interesting to see how many people with graduate degrees leave the province.

During the study of the WNMF, many people expressed great concern about the declining population (Den Otter & Beckley, 2002). For the period 1991-1996, the population in Corner Brook dropped by 2.3%. People are aware that young people are unable to find work in rural communities, and often leave the province to attain new skills and make use of them. People believe that as soon as young adults finish university, they leave the province to find work. Others believe that changes in social values have led to a declining population. One interviewee noted that when he was growing up, a few households would constitute a large number of children, while today you may only find a couple children per dozen houses (Den Otter & Beckley, 2002). Clearly, changes in social values such as: sizes of families and educational attainment – are affecting the population.

Many people interviewed spoke of how, when they were young, people had large families to help with the variety of chores that were part of a subsistence culture. Children could help with fishing, hunting, woodcutting, cooking, and other necessary tasks (Den Otter & Beckley, 2002). The presence of the Roman Catholic Church was also a powerful force, promoting large families and limiting birth control. Children in the past were an essential element of vibrant communities. However, as global and local economies evolved, the importance of large families has diminished. Often, both parents are wage earners and have less time to devote to children. Today, it is believed that it is no longer necessary to have a large family to deal with the workload of day-to-day living (Den Otter & Beckley, 2002).

Community sustainability can be affected by a declining population for a number of reasons. Some people fear that smaller communities will not have the resources to adapt to the ever-changing global economy (Den Otter & Beckley, 2002). Also, the migration of the brightest young minds ('brain-drain') may reduce the source of new ideas and energy for the challenges of

the Newfoundland economy. Some even worry that there will not be enough people to maintain any type of economic growth (Den Otter & Beckley, 2002). If this tendency continues today, then some of the most valuable minds may already be gone for the purposes of the HRB survey. Some of these minds may hold strong connections to the natural environment. These people may have left smaller communities, but still hold memories and experiences which would make them valuable for the values survey. They could clearly represent a meaningful sample for the survey.

A new concern is that middle-aged people are starting to follow their children when they leave the province for new opportunities. Usually, people do end up returning to the island to live the 'good life' in Newfoundland. People feel that one of the greatest challenges to sustainability is finding ways to keep people in the region and get back migrants by offering them meaningful job opportunities (Den Otter & Beckley, 2002). If the HRB area could offer newer employment opportunities such as the Churchill Falls Project, then the number of younger residents will increase and the region could develop sustainably. The province has unfortunately experienced an average drop in population of 1.5% and a net migration of 0.6% (-3,015 individuals) during 2006. These number represents what is called 'brain-drain,' and the phenomenon affects the sustainability of Corner Brook and other smaller towns.

Discussion

Even though there is a significant population decrease in Newfoundland, the people believe that their communities are not transient. Corner Brook and the smaller communities keep a somewhat stable population and do not show great seasonal variation (Den Otter & Beckley, 2002). Generally, people are leaving but residents still feel that they are in close relation with their neighbours and do not want to see a continual changing of faces. A stable community of familiar faces will host strong bonds because the people have a lot to relate to within their region (Den Otter & Beckley, 2002). This 'comfortable' feeling will result in strong connections with the areas where people live, thus developing a healthy community life.

There are many people in the HRB that use federal support such as Employment Insurance so that they can stay in Newfoundland (Den Otter & Beckley, 2002). These people generally live in small outport communities and do not want to leave their hometowns. For example, many Newfoundlanders rely on extending short work seasons by collecting Employment Insurance and through other work programs. This trend does not promote long-term sustainability, but strong ties to smaller communities (Den Otter & Beckley, 2002). Newfoundlanders have discovered a variety of ways to adapt to the system to fit their lifestyle. They use whatever combination of jobs and programs that are available to improve their lives. During the WNMF study, one resident spoke about a cousin who worked as a rural fisherman for four months a year (Den Otter & Beckley, 2002). His wife did not fish with him, but he split the income with her so that they could both draw EI and double their payments. The cousin cut his own firewood and did all the maintenance on his car and home. The man telling the story reported that he doesn't live as nicely as most people in the outports (Den Otter & Beckley, 2002).

This is the type of person who would be highly representative for the values survey. Fishermen living like this will have strong relationships with traditional lifestyles in Newfoundland. The story illustrates the rural Newfoundland lifestyle – making use of the

abundant natural resources available to supplement incomes. This is most apparent in smaller communities where hunting, berry-picking, fishing, woodcutting, and gardening are a significant part of the lifestyle (Den Otter & Beckley, 2002). There were less people in Corner Brook that indicated that they consider subsistence activities to comprise much of their income because of the various high-income job opportunities (Den Otter & Beckley, 2002). Many people in Corner Brook, however, do hunt and fish. Another interviewee in the WNMF stated that:

“No one in this province needs to go hungry if they don’t want to. Every guy in communities up and down this coast can go out and get a moose if he wants. Even if you don’t get a license, you can still get a moose. There’s hardly anyone out there patrolling the woods. We’ve got trout in the streams and you can grow good vegetables. No one is starving here.” (Den Otter & Beckley, 2002)

Traditional lifestyles contribute significantly to many people’s incomes because they need to purchase fewer supplies. Many people in the WNMF study suggested that Newfoundland communities will always be sustainable as long as people have access to adequate stocks of wildlife and other natural food supplies (Den Otter & Beckley, 2002). Subsistence activities remain a vital part of the traditional Newfoundland lifestyle, despite other changes in the social system (Den Otter & Beckley, 2002). These people living the subsistence lifestyle are prime subjects for the HRB study. Getting input from these people with true connections to the natural environment will prove to be interesting in the values study. They have lived a traditional way of life for many years, and have watched Newfoundland develop over the years. They have also watched Newfoundland evolve from a way of life based on fisheries to one based on forests. Today, there is a lot of attention around the tourism sector of the province, which will likely be the next major income generator of the province, provided that the natural resources are sustained.

In the long run, communities will likely be sustainable if people want to stay there. Newfoundlanders prove to be very committed to their home and have a strong sense of the place in which they live (Den Otter & Beckley, 2002). This relationship is strongest in smaller communities where many of the respondents in the WNMF study spoke of how much they love the place and could not bear the thought of leaving it. People still enjoy a high quality of life, despite harsh economic conditions because of the place and other people. Recreation opportunities help increase the quality of life, as some consider the woods to be a second school (Den Otter & Beckley, 2002).

The provincial government of Newfoundland and Labrador proves to help develop sustainability on the island, such that communities and traditional ways of life are preserved through the Strategic Social Plan (Den Otter & Beckley, 2002) and the Social Development Act (Den Otter & Beckley, 2002). In Lark Harbour and Rocky Harbour, unemployment has been decreasing over the period of 1991-1996. This trend has held true for the entire western Newfoundland region over that 5 year period. In 2006, the unemployment rate in western Newfoundland was 14.4%, while the provincial rate was 18.5%. The government remains optimistic about the future of Newfoundland and Labrador and points to declining unemployment in recent years and expansion in most resource industries as positive indicators of an expanding economy. By promoting self reliance to enhance social conditions and sustainability, the government hopes Newfoundlanders can capitalize on the self reliance that has enabled them to live successfully for past generations (Den Otter & Beckley, 2002). This will

only be possible if dependency on government transfers continues to decline. It would be interesting to see how Newfoundlanders feel about their government helping them to sustain traditional lifestyles.

The number of individuals in Corner Brook and surrounding area who collected EI at some point in the year 2009 was 3575. The figure in 1992 was 5950. Clearly, the number of people receiving EI has decreased over the last 20 years, so the Strategic Social Plan for the province initially worked. However, in the past 10 years, the number of people getting EI fluctuated slightly from year to year.

Almost everyone agrees that changes in technology will continue to make traditional sustainability more difficult because mass extraction and production have reduced the number of jobs and quality of the environment (Den Otter & Beckley, 2002). Newfoundlanders have traditionally been sustainable for 500 years because of fishing and forest resources, and by supplementing incomes with products from the land (Den Otter & Beckley, 2002).

As Newfoundlanders retired traditional hook and line style fishing for deep sea trawlers, the aquatic resources were decimated and the ability of people to fend for themselves was reduced (Den Otter & Beckley, 2002). To return to a more sustainable life style, it is necessary to return to a more diverse, labour-intensive workforce where people are trained with the requisite skills (Den Otter & Beckley, 2002).

Obviously, it is important to understand how Newfoundlanders feel about cultural traditions, social networks, and aspects of the physical environment (Den Otter & Beckley, 2002). By learning the values of the residents, studies can assess the long-term prospects for the area. It is important for the HRB study to capture significant aspects of community life that are critical to sustainability. For example, it is very interesting to find out levels of subsistence activity and its importance to the livelihood of many rural Newfoundlanders. By examining the different views of the residents in western Newfoundland, a more complete picture of the sustainability puzzle is understood (Den Otter & Beckley, 2002).

Conclusion

Traditionally, Newfoundlanders have sustained their communities through their adaptability, persistence, and independent spirit. Natural resources have been used for occupations and everyday survival. Even when surviving was tough, people were able to subsist on whatever they could salvage from the forests, oceans, and lakes (Den Otter & Beckley, 2002). The dedication is important in the future to deal with some of the issues facing the province. In the face of globalization trends that are changing economies and communities worldwide, Newfoundlanders are challenged to maintain their communities and traditional ways of life (Den Otter & Beckley, 2002). The proposed human values study will show a realistic image of the individual and social values people hold if a representative, well randomized and stratified sample is surveyed based on this dynamic demographic profile.

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Appendix

HUMAN VALUES SURVEY ON THE ENVIRONMENT, LAND AND NATURAL RESOURCES IN THE HUMBER RIVER BASIN

Hello. I am a member of a research team doing a study on environmental values in the Humber River Basin. I am hoping I can take about 20 minutes of your time to ask you a few simple questions. Your input will be treated strictly confidentially and you will not be identified in the study.

1. Do you participate in any of the following recreational activities?

Activity	Frequently	Sometimes	Not very often	Not at all
Fishing	1	2	3	4
Boil up	1	2	3	4
Visit the forest	1	2	3	4
Snowmobiling	1	2	3	4
ATV	1	2	3	4
Snaring	1	2	3	4
Game hunting (eg moose)	1	2	3	4
Canoeing (boating, rafting)	1	2	3	4
Hiking	1	2	3	4
Bird watching	1	2	3	4
Skiing	1	2	3	4
Climbing	1	2	3	4
Other	1	2	3	4

2. How often do you participate in the following type of activities?

Activity	Frequently	Sometimes	Not very often	Not at all
Tree planting	1	2	3	4
Recycling	1	2	3	4
Composting	1	2	3	4
Buying local goods and services	1	2	3	4
Shopping at/going to local farmers markets	1	2	3	4
Shopping on Sundays	1	2	3	4
Carpooling	1	2	3	4
Biking	1	2	3	4

Volunteering	1	2	3	4
Other	1	2	3	4

3. Do you participate in any of the following activities for personal consumption or use?

Activity	Frequently	Sometimes	Not very often	Not at all
Grow your own food	1	2	3	4
Preserve food that is in season	1	2	3	4
Raising poultry or livestock	1	2	3	4
Berry picking	1	2	3	4
Trouting/fishing for personal consumption	1	2	3	4
Domestic harvesting (cutting wood for fuel)	1	2	3	4
Cutting wood for lumber	1	2	3	4
Building your own house, or helping others build their own house	1	2	3	4
Bread making	1	2	3	4
Hunting	1	2	3	4
Other (provide the rank for each activity identified)	1	2	3	4

4. Please indicate how much you agree with the following statements:

Number		Strongly agree	Agree	Disagree	Strongly disagree
1	I would pay slightly more for food that was produced locally (in Newfoundland)	1	2	3	4
2	I would pay slightly more for food that I knew was produced in an environmentally sustainable way	1	2	3	4

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5. For each of the following indicate how important it is in your life. Would you say it is (read out and code one answer for each)?

		Very important	Somewhat important	Not very important	Not at all important
1	Family	1	2	3	4
2	Friends	1	2	3	4
3	Leisure time	1	2	3	4
4	Work	1	2	3	4
5	Community	1	2	3	4
6	A pristine environment	1	2	3	4
7	A traditional way of life	1	2	3	4

6. Is life on the west coast of the island as a whole getting better or worse?

Better	Worse	Staying the Same	No Opinion
1	2	3	4

7. The Humber River Basin is blessed with numerous natural resources. Can you please rate these resources according to how important you think they are?

		Very important	Somewhat important	Not very important	Not at all important
1	Forests	1	2	3	4
2	Fisheries	1	2	3	4
3	Minerals	1	2	3	4
4	Water	1	2	3	4
5	Land	1	2	3	4
6	Oil	1	2	3	4
7	Wildlife	1	2	3	4

8. Here are two statements people sometimes make when discussing the environment and economic growth. Which of them comes closer to your own point of view? (Read out and code one answer):

Number	Statement
1	Protecting the environment should be given priority, even if it causes slower economic growth and some loss of jobs.
2	Economic growth and creating jobs should be the top priority, even if the environment suffers to some extent.
3	Other answer (code if volunteered only!).

9. I am going to read out some statements about the environment. For each one, can you tell me whether you strongly agree, agree, disagree or strongly disagree? (Read out and code one answer for each):

Number		Strongly agree	Agree	Disagree	Strongly disagree
1	I would give part of my income if I were certain that the money would be used to prevent environmental degradation.	1	2	3	4
2	I would agree to an increase in taxes if the extra money were used to prevent environmental degradation.	1	2	3	4
3	The Government should reduce environmental degradation, but it should not cost me any money.	1	2	3	4

10. I am going to read out a list of environmental concerns that either currently affect, or may potentially affect the health and wellbeing of communities in the Humber region. Please, tell me how serious you consider each one to be here in your own community. Is it very serious, somewhat serious, not very serious or not serious at all? (Read out and code one answer for each problem):

		Very serious	Somewhat serious	Not very serious	Not serious at all
1	Water quality	1	2	3	4
2	Sewage management	1	2	3	4
3	Air quality	1	2	3	4
4	Soil quality	1	2	3	4
5	Visual quality of the landscape	1	2	3	4
7	Are there other environmental problems you are concerned about?	1	2	3	4

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11. Now I will briefly describe some people. Using this card would you please indicate for each description whether that person is very much like you, like you, somewhat like you, not like you, or not at all like you? (Code one answer for each description).

Number	Statement	Like me	Some what like me	Not like me	No Opinion
1	It is important to this person to think up new ideas and be creative; to do things one's own way	1	2	3	4
2	It is important to this person to be rich; to have a lot of money and expensive things.	1	2	3	4
3	Living in secure surroundings is important to this person; to avoid anything that might be dangerous	1	2	3	4
4	It is important to this person to have a good time; to "spoil" oneself.	1	2	3	4
5	It is important to this person to help the people nearby; to care for their well-being.	1	2	3	4
6	Being very successful is important to this person; to have people recognize one's achievements.	1	2	3	4
7	Adventure and taking risks are important to this person; to have an exciting life.	1	2	3	4
8	It is important to this person to always behave properly; to avoid doing anything people would say is wrong.	1	2	3	4
9	Looking after the environment is important to this person; to care for nature.	1	2	3	4
10	Tradition is important to this person; to follow the customs handed down by one's religion or family.	1	2	3	4

12. Now I am going to read a list of voluntary organizations. For each one, could you tell me whether you are an active member, an inactive member or not a member of that type of organization? (Read out and code one answer for each organization):

Number	Statement	Active Member	Inactive Member	Don't belong
1	Church or religious organization	2	1	0
2	Sport or recreational organization	2	1	0
3	Art, music or educational organization	2	1	0
4	Labour Union	2	1	0
5	Political party	2	1	0
6	Environmental organization	2	1	0
7	Professional association	2	1	0
8	Humanitarian or charitable organization	2	1	0
9	Any other (write in): _____	2	1	0

DEMOGRAPHICS

13.

- 1 Male
- 2 Female

14.

In which one of the following age groups do you belong?

Age Range	Code
0-14	1
15-29	2
30-44	3
45-59	4
60+	5

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15. What is the highest educational level that you have attained? [NOTE: if respondent indicates to be a student, code highest level s/he expects to complete]:

- 1 No high school
- 2 High school
- 3 College or trades
- 4 University

16. Have you received EI in the past year?

- 1 Yes
- 2 No

17. Is your job in any of the following fields?

1. Fisheries
2. Forests
3. Mining
4. Energy
5. Oil and gas
6. Tourism
7. Outdoor recreation
8. Agriculture?
9. Education?
10. Health care?

18. Are you working for the government or a public institution, for private business or industry, or for a private non-profit organization? If you do not work currently, characterize your major work in the past. Do you or did you work for (read out and code one answer):

1. Government or public institution
2. Private business or industry
3. Private non-profit organization

19. Within what range does your approximate annual household income fall, before taxes? (Be sure to emphasize 'household' income)

Range	Code
0-20,000	1
20,000-40,000	2
40,000 – 60,000	3
60,000 – 80,000	4
80,000-100,000	5
>100,000	6

20. How many people are in your household by age group (yourself included)?

Age Range	Code	Number
0-14	1	
15-29	2	
30-44	3	
45-59	4	
60+	5	

21. Would you be interested in participating in the near future in a focus group on the environment, land and natural resources within the Humber River Basin?

- 1 yes
- 2 no

22.

How many years have you lived in your community?

Number of years _____

23. (Code how interested the respondent was during the interview):

- 1 Respondent was very interested
- 2 Respondent was somewhat interested
- 3 Respondent was not interested