First MUN Earth & Human Systems Strategic Planning Session Synthesis, Minutes, and Background

Guiding question: What can we do at MUN to increase societal capacity to deal with highly interlocking global environmental issues?

A broad cross-section of faculty at Memorial University is proposing a series of new research, teaching and operational initiatives within the University with the aim of addressing the challenge of social and environmental sustainability. Although sustainability is a global problem, the issue affects all jurisdictions, large and small, in a unique way and hence each must seek its own solutions. Moreover, inasmuch as MUN is the sole university in the province of Newfoundland and Labrador, leadership shown by MUN on these issues should eventually redound across the province to the benefit of other communities and the population as a whole. This report is the outcome of an inaugural planning session held on December 13th, 2007 under the auspices of the Harris Centre and attended by 21 faculty members from the faculties of Arts, Engineering, Medicine and Science. The objectives of the session were to assess existing sustainability efforts at Memorial, evaluate strengths and weaknesses within the University system, and begin strategic planning on key new initiatives aimed at making the University a leader in sustainability teaching, research, outreach, and practice.

Recent Background

Environmental research and teaching activity at Memorial have recently gained momentum with the launch of the Earth and Human Systems Sustainability Initiative in January 2007. Results of this initiative include: an interdisciplinary journal club, a well-subscribed listserve, a graduate course on sustainability, and creation of the annual high-profile *Dialogue on Advancing Global Sustainability*. The strategic planning session sought to capitalize on the momentum established during the previous 12 months and to stimulate a wide-ranging, interdisciplinary discussion on the future of the Initiative and other sustainability activities and issues at Memorial, and MUN's role in promoting sustainability throughout the province.

The guiding question (stated above) intersects all aspects of the University's mission, including teaching, research, social outreach, and university operations, and it should therefore be of prime importance to the institution, yet efforts towards sustainability at Memorial remain fragmented, inchoate and underdeveloped. Interdisciplinary collaboration in research and teaching, essential in such a multi-faceted subject, are hindered by institutional structures, the narrow disciplinary training and research funding of most faculty, and a lack of co-ordination. Nonetheless, faculty members with an interest in sustainability issues expressed their belief that the University has the potential to become a driving force for positive change in the province and perhaps eventually an international example in addressing the challenge of social and environmental sustainability, especially within the context of a resource-based economy.

Existing Resources

Participants at the strategic planning session identified the several important existing institutional resources and assets promoting sustainability research, teaching and operational practices at MUN, including:

1. The Advisory Committee on Sustainability and Sustainability coordinator
2. The existing environmental science graduate program, presently offering MSc degrees, but soon to be expanded to include a PhD program
3. Many existing undergraduate and graduate courses in several faculties and departments across the university that touch on environmental and natural *resource* management issues

4. Several high-profile research networks and initiatives, eg : Community—University Research for Recovery Alliance, the Canadian Healthy Oceans Network, ArcticNet, IPY projects, and SafetyNet
5. A diverse set of faculty (including several Canada Research Chairs) with environmental interests.\
6. MUN Project Green.

Opportunities
Reflecting on these and other resources, participants identified a number of potential actions and opportunities for promoting sustainability research and practices at Memorial including:

1. Establishment of an interdisciplinary environmental/social sustainability institute or centre
2. Establishment of an environmental/sustainability research web portal
3. Establishment of a monthly seminar series on Global Change Sustainability
4. Establishment of off-campus lectures and community outreach in the province
5. Integration of sustainability concepts into existing courses and the development of new courses, and curricula with interdisciplinary teaching credited to faculty course load accounting
6. Significant faculty renewal over the next decade
7. Connecting students, research and the community through the identification of regional research needs and projects (on the Harris Centre model, possibly via expansion of Harris Centre mandate)
8. Promoting and embedding sustainable operating practices throughout Memorial University, including the elimination of major sources of pollution and the construction/refurbishment of sustainable buildings.

Proposals:
As a first step to achieving the goals of promoting sustainability in teaching, research and institutional operations at Memorial, participants at the strategic planning session (and subsequent respondents to the draft report) propose the following four actions (recognizing that the 4th item requires a longer time-frame):

1. Complete the Strategic Plan for the Earth and Human Systems Sustainability Initiative to advance environmental teaching, research, and practice at Memorial. *This will require the support of part-time staff and/or teaching release for a faculty member to develop, formulate and co-ordinate ongoing collaborative development of the initiative.*
2. Seek the endorsement of Memorial's Upper Administration for the goals of this Strategic Plan, solicit their collaboration and input in its formulation, and leadership in its implementation.
3. Pursue ongoing efforts at individual, departmental, and faculty levels and within the Administration to implement the goals of the strategic plan and thereby to widen the participation of Memorial faculty and of the University community as a whole in the achievement of sustainability goals. *Critical aspects here include the solicitation of broad-based participation from under-represented faculties such as Arts, Business, Education and Medicine, outreach to / involvement of non-faculty groups on campus, and support from all levels of the Administration.*
4. *Ensure that Memorial University's Strategic Plan acknowledges the critical importance of Global Sustainability and that the all-encompassing study of the environment at MUN is a priority.*

In summary, two key themes emerged during the meeting:

1. The strong appetite for and satisfaction from interdisciplinary discourse and discussion.
2. The underlying desire to integrate the context of social and environmental sustainability into teaching, research, outreach, operations and practice at MUN

[To participate, join the listserv for the initiative, or for more information, refer to the interim website : http://www.physics.mun.ca/~lev/EHSSI.html or contact Lev Tarasov, lev@physics.mun.ca.]

Attendance overview: 21 faculty (from Arts, Engineering, Medicine, and Science), 2 graduate students, and 2 facilitators from the Harris Centre participated in a 4 ½ hour long strategic planning session on Dec 13 2007. Furthermore, at least 12 other faculty would have attended if scheduling permitted. There was no attendance from the Business school (due to scheduling problems), nor from Education, and only one attendee from Medicine. Only 3 women attended. The meeting was promoted through the Earth and Human Systems Sustainability listserve, an email broadcast to Deans and Heads by the Harris Centre, and by word of mouth.

RESULTS OF THE SESSION:

Current Resources/Assets

Teaching & outreach	**Research/Advising**	**MUN operations sustainability**
Environmental Science program, soon with inception of PhD program	CURRA 5 year , at Bonne Bay marine station (Community – University Research for Recovery Alliance).	MUN sustainable advisory committee
Café Scientific	Canadian Healthy Oceans Network	MUN project green
Life long learning – certificate in regional policy and development	Arctic Net and IPY (International Polar Year)	
ACE students (business)	Safety Net – occupational health and safety	
Some existing courses, eg. Economics of natural resources, Sociology 6620 Engaging Society for Sustainability.	Canada Research Chairs: Ratana, Murray Rudd, Lev, Sue, George Rose and other faculty such as Sean Caddigan and John Sandler, P. Snelgrove, C. Parrish, and many others	
Grad students in Geography have an organization	CCORE	
Labrador Institute	Marine Institute – Paul Winger; Centre for sustainable aquatic resources. Also there is the Centre for aquaculture and seafood development – deal with fish waste	
Engineering - New faculty -Renewable Energy - NSERC design chair, - initial stage Sustainable design & enterprise	Lots of new faculty – Earth Sciences is rebuilding in the Earth sciences stream, Biology has hired 10 faculty in the last 2-3 years (how many of these are to deal with environmental sustainability?)	
Engineers without Borders	Geography: New Strategic Plan – School of Environment	

	ISER(Institute of Social, Economic and Research)	
	IBIS – Grenfell; housed at Grenfell but in the govt. in the Dept. of Environment (Shane Mahoney).	
	Ocean Sciences Centre	
	Dr. Joe Brown Aquatic Research Facility	

Sustainability actions/opportunities Brainstorm

Teaching & outreach	**Research/Advising**	**MUN operations sustainability**
Service learning program		Expand recycling on campus
General courses in environment & sustainability to be offered in science, arts, engineering, business, medicine, education with a possible general global civics course for all undergrads	Environmental studies (social science) grad program to match Env. Science graduate program with close collaboration and exposure to interdisciplinary work	Green design (eg carbon netural) for new MUN buildings
Develop environmental engineering minor stream of courses	MUN internal research funding pool for environment & sustainability ($50k/yr?)	Retrofitting MUN buildings for energy efficiency
Develop high school curriculum on environment & sustainability for use in public schools	Advising business and government on lowering ecological footprints	MUN carbon offsetting company, with attendant changes in MUN travel policy
Monthly off-campus lecture series & open forum – speakers from MUN or other local sources	Environmental/sustainability research at MUN web-portal	Rules around MUN procurement (no bottled water from off island, no Styrofoam cups, etc.
Monthly environment & sustainability movie night (analogous to radical media movies in 2005-06)	High profile monthly seminar series on Global Change and Sustainability	Expand recycling on campus, along with food and yard waste composting: act as catalyst for city-wide recycling
Issues workshops for media, civil servants, and business	bi-weekly lunch for University community to promote interdisciplinary interactions	Upgrade of MUN heating plant to cogeneration facility with carbon off-setting
faculty workshops on how to work with public media	brown-bag research seminars floating across departments	Sheltered bicycle parking
Lifelong learning seminars/ courses for Seniors/public		sustainable and environmently friendly printing practices, i.e. organic and other low impact inks, recycled paper, electronic offices (i.e. 0 paper offices).

		Some scientific journals are working hard and making progress on this kind of thing. MUN Printing Services and other offices should be doing likewise. What is paper use and ink source for photocopiers at MUN for example. MUN must be a huge consumer of photocopying supplies, including paper.
Open access lectures on web		
Spokes-teams to comment on interdisciplinary issues		
Integration of sustainability concepts into general teaching	Connect students, research, and community: integrate teaching with research and local/regional needs/projects, Need analogue of Harris Centre for environmental and global change issues (or expansion of Harris Centre mandate and resources)	Make MUN an example of and catalyst for sustainable infrastructure/operations

SWOT: internal strengths and corresponding weaknesses. external opportunities and corresponding threats: Keep in mind that potentially every strength/opportunity and weakness/threat carries their own nemesis.

Internal Strengths	Internal Weaknesses
Diversity and much expertise in many different fields. More horsepower in sustainability at MUN than the rest of the Province. Can we carve out a niche here?	Fragmented expertise. No one seems to be defragmenting it, ie the administration. Fragmentation extends to the student level. Impoverishment of student life so that most active clubs are departmental
	MUN web site needs improving. Need full time person (s) to build web pages
Energy/enthusiasm/success involved with current Earth and Human Systems Sustainability Initiative	Faculty overload and burn out. Defeatist attitude; tried it before etc.
Not a lot of internal restrictions on program development and teaching e.g., easy to co-teach courses (at least in Science) and apportion credit	Lack of focus on Academic programs and program development in environmental sustainability at the level of the Administration

Change over in upper administration: President and Deans	
	Cost to replace aging infrastructure
Strong interest at faculty level for collaboration between Grenfell and MUN	Administrative divide between Grenfell and MUN
Faculty renewal – opportunity and strength	loss of experience and institutional memory through faculty retirements
	University commitment to sustainability is not evident, e.g., it is not in the Strategic Plan. Environment seen as a special interest topic.

External Opportunities	**External Threats**
Real thirst in the public for guidance, information, leadership… etc. Just now more people are beginning to understand that there are choices beyond development.	Oil and Gas and mining orientation of economy and associated environmental and social impacts. Perhaps most important is the challenge to demonstrate that being environmentally responsible does not mean the loss of jobs and a weaker economy. This is the REAL issue, and it requires a very interdisciplinary solution. Some perceived a third world mentality of the Province.
Growing demand for graduates with interdisciplinary experience	Competition from other Universities, especially those with more developed interdisciplinary programs
Premier/Government support for sustainable development. Williams worked to pass the Sustainability Act for the Province. Bilateral relations between civil servants, politicians and individual faculty.	Political and personal tensions. Provincial government not seeking University expertise with respect to environmental sustainability issues
IBIS is a major opportunity – new $ the Govt. wants to invest in sustainability. Sustainability is becoming a higher priority with funding bodies.	New provincial R&D crown corporation – may be used to force Conservative agenda on MUN via control of research funds.
one Province/one University	
The Province has experienced an environmental collapse. The Province is for the large part unspoiled. Many students are attuned to nature b/c that is what they grew up in	Our relatively pristine environment may create the impression among the public that sustainability of the environment is not under threat

NEXT STEPS/ROAD MAP:

1) Write up/refine report

2) Circulate report for feedback + incorporate. Discuss with other departments and interested parties (eg: Education, Project Green) and get signatures on commitment/interest to pursue the guiding question.

3) Andy Fisher, Josh Lepawsky, Paul Marino, Lev Tarasov, and Sue Ziegler to present finalized report to Eddy Campbell (and VPs?) and request funding to complete the strategic planning process:
   1. Need a staff member, contractual support to research, develop and deliver the Plan and create a website: We should define the job requirements and specifications in a one page document.
   2. Create oversight committee with faculty reps from science, arts, medicine, engineering, education, business, and from facilities management.
   3. Funding estimate?: 0.5 or 1 FTE staff person

Attendees:
A. M. Martin, Department of Biochemistry
Andy Fisher, Engineering
Ken Snelgrove, Engineering
Chris Parrish, Ocean Sciences and Env. Sci. Program
Arn Keeling, Department of Geography
Barbara Neis, SafetyNet, Sociology
Rodolphe Devillers, Geography
Toby Rivers, Earth Sciences
Joseph Hodych, Earth Sciences
Susan Ziegler, Earth Sciences
June Harris, Faculty of Medicine
Evan Edinger, Depts. of Geography & Biology
John D. Jacobs, Geography
Joseph Wroblewski, Biology
Josh Lepawsky, Department of Geography
Lev Tarasov, Physics and Physical Oceanography
Michael Clair, Harris Centre
Paul Bendzsa, Music
Paul Marino, Department of Biology
Rob Briggs, Department of Physics and Oceanography
Tristan Hauser, Department of Physics and Oceanography
Steven Wolinetz, Political Science
Robert Helleur, Chemistry
Rob Greenwood, Harris Centre

Regrets:
Trevor Bell, Mike Burns, Don Deibel,Brad deYoung, Luise Hermanutz, Bill Montevecchi, Kathleen Parewick, Richard Rivkin, David Schneider, Paul Snelgrove, Michael Temelini, Roger White

Memorial University
Earth & Human Systems Sustainability Initiative

Planning Session
9:30 a.m. – 2:00 p.m.
Thursday, December 13, 2007

4th floor boardroom, Spenser Hall

AGENDA

9:30 – 9:45 a.m.	Welcome / Introductions / Review Agenda (Rob G.)
9:45 – 10:00 a.m.	Overview / Background / Preliminary Long-term Direction for the Initiative (Lev T.)
10:00 – 10:15 a.m.	Questions / Comments re. Long-term Direction
10:15 – 10:45 a.m.	Round Table: What are we doing now? ➢ Teaching ➢ Research ➢ Outreach/partnerships
10:45 – 11:00 a.m.	Break
11:00 – 12:00 noon	Round Table: What else should we be doing (possibilities)?
12:00 – 12:30 p.m.	Lunch
12:30 – 1:30 p.m.	Break-out Groups: SWOT Analysis What are the **Strengths and Weaknesses of MUN** in advancing the Initiative? What are the **Opportunities and Threats outside MUN** to advancing the Initiative?
1:30 – 2:00 p.m.	Report back and Next Steps and who does what?

MUN Earth and Human Systems Sustainability Initiative Background

Motivation: Example of cod stocks collapse and potential global analogues as well as foot-dragging over Kyoto,...

Overall goal: Improve our societal capacity to deal with long-term complex Earth systems issues (generally involving non-linear highly coupled systems)

Or variant guiding question: What can we do at MUN to increase our societal capacity to deal with highly interlocking global environmental issues? (teaching, research, outreach/public education/dialogue, policy development, integrating social and environmental sustainability into University culture/practice ...)

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4 Keys:

1) "System": emphasizes interconnectedness (Earth systems include atmosphere, biosphere, cryosphere, hydrosphere, lithosphere)

2) Traditional deterministic management models don't work with nonlinear systems which can have critical thresholds, delayed response,... (eg cod stocks). Need adaptive risk-based approaches that embrace uncertainty.

3) Need to bridge (both within and between) natural and social/policy sciences and public understanding (humanities) and policy/governance/civil society:

4) Global encompasses local (Think globally, act at whatever scale is most appropriate)

Diagnosis: Different (sub-)disciplines will offer different perspectives on the root causes of our current predicament. Here's a start:

1) Classical view: vested interests, lack of public commitment/understanding, poor environmental literacy, bureaucratic inertia
2) Predominance of linear deterministic paradigm in understanding the world around us, while earth system dynamics have strong non-linear highly coupled elements that result in fundamental indeterminacies and the necessity of a precautionary risked-based policy approach
3) externalization of the environment and social goods from the economic system, and short-term economic horizon (discounting)
4) disconnect between science and policy and public understanding
5) spectator/consumer culture, alienation/anomie, ...

Background:

Meeting last January (word of mouth, @ 10 faculty)

ESS listserv (to join email lev@physics.mun.ca with desired name)

Dialogue proposal -> implementation, initial funding for 2 more years

Earth and Human Systems Sustainability graduate course

Earth and Human Systems interdisciplinary journal club; interim web-page and listserv subscription info at: http://www.physics.mun.ca/~lev/jclub.html

Dialogue roundtable with Diana Liverman: momentum, opportunity, interest from students for interdisciplinary program, need dedicated (ie funded, 0.5 or 1 FTE) coordinator/animator/doer to translate our ideas into action (given the usual overload of faculty) -> Need a clear what and why: ie a strategic plan.

Email broadcast call-out for planning session:

Invitation to Earth & Human Systems Strategic Planning Session

Thursday, December 14, from 9:30 am to 2:00 pm

Spencer Hall, 4th floor boardroom

How can we better educate students across Memorial University to be responsible global citizens? What can your discipline offer to colleagues and students across campus in this context?

How can Memorial University better work with actors/stakeholders outside the University community towards building consensus and solutions on matters dealing with sustainability?

More generally, what can we do at MUN to increase our societal capacity and to encourage social and technical innovation to deal with interlocking global change issues?

Our society faces enormous environmental challenges. We have limited capacity to address global change issues involving complex Earth and Human systems (capitalized to emphasize the planetary sense of "Earth" including biological, human, ocean, terrestrial, and atmospheric components). An obvious example is the lack of a credible action plan to respond to the challenge of global warming. Closer to home, a stark regional example of the impact of this incapacity is the collapse of the cod stocks. On local to global scales, we are facing numerous challenges and potentially major environmental changes, with consequent impacts on social resilience and ecosystem/human health.

Our incapacity arises in part from fundamental divides between various disciplines and faculties (including the physical and social sciences, engineering, business, education, humanities,...), policy, and public understanding. Researchers at Memorial University are addressing sustainability issues, but as an institution we lack mechanisms to integrate people from different disciplines to address fundamentally interdisciplinary issues. The lack of interdisciplinary experience, institutional structures, and departmental inertia have created barriers to interdisciplinary discussion, research, and education.

If you are interested in discussing the role of Memorial University in the area of sustainability and global change, you are invited to a strategic planning session organized by the Leslie Harris Centre of Regional Policy and Development.

This meeting is open to faculty, staff and students of Memorial University (including the Marine Institute). Registration is required for catering purposes. Please advise if you have any dietary requirements.
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To register, contact Katherine Mason at 737-3143 or kmason@mun.ca.