

National Round Table on
the Environment
and the Economy

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l'environnement
et l'économie

Summary Report

**University
Presidents'**

Workshop:

Learning and

Sustainability

March 1995

Ottawa

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University Presidents' Workshop: Learning and Sustainability

March 13, 1995, Ottawa

Summary Report

Executive

University Presidents' Workshop: Learning and Sustainability

March 13, 1995

Summary

Executive Summary

The National Round Table on the Environment and the Economy (NRTEE) convened this workshop of 20 presidents and vice-presidents of universities to discuss the progress of the university community toward interdisciplinary research and teaching in the context of the role of education in moving society toward sustainability. This initiative followed earlier NRTEE-hosted workshops that brought together firstly, representatives of Canadian institutes working in sustainable development, environment and economy, and secondly, university representatives of environmentally related teaching programs.^{1, 2} The workshop was chaired by Jack MacLeod, a member of the NRTEE. Dr. Geraldine Kenney-Wallace, President of McMaster University, and Murray Fraser, President of the University of Calgary, acted as study group facilitators.

Jim MacNeill, former member of the Brundtland Commission and co-author of its report, *Our Common Future*, provided participants with a context for the workshop. Key themes developed by Mr. MacNeill and discussed by the group included the broad thesis of interdisciplinary teaching and research in education; the role of faculties in sustainable development education; and the interaction of universities with granting councils.

History shows that universities are willing to commit themselves to sustainable development goals. The Talloires Declaration, the Dalhousie Declaration and the recently signed Kyoto Declaration all address the role of universities in transforming to a sustainable society. As the Dalhousie Declaration states, the educational, research and public service roles of the universities enable them to

be competent, effective contributors to the major attitudinal and policy changes necessary for a sustainable future.

Moreover the Dalhousie Declaration outlines over 80 recommendations for both the short and long term and at the local, regional, national and international levels.

Sustainable development offers a huge and exciting research agenda for universities. No other institutions have the range of knowledge and expertise to address these issues, as well as the ability to form partnerships and consortiums. Concurrent with action in universities there should be action in the private sector.

A free-ranging discussion among participants identified several key issues that clustered around three thematic areas: organizational structures, resource issues and recognition for interdisciplinary teaching and research.

Participants concluded that universities have the necessary capacity to develop the intellectual framework to support practical applications of sustainable development concepts. Participants, as academic leaders, have the capability to convene academic disciplines on large, complex issues, mobilize resources, create incentives and programs for faculty development and, most importantly, to lead by example, thereby moving their institutions toward interdisciplinary teaching and research.

It was recognized that universities can show leadership through innovation in curriculum design and pedagogy and faculty development. The sharing of inventive ideas among universities and faculty will increase the penetration of these sorts of innovations. An extensive list was

¹ Appendix 4 presents a summary of the Sustainable Development Institutes Workshop.

² Appendix 5 presents a Statement of Common Principles developed in the Teaching Programs Workshop.

assembled of related initiatives already under way at the universities represented.

As well, universities can expand their scope through outreach and partnerships for sustainable development. Partnerships will address many of the resource issues raised by participants and are becoming more and more prevalent at Canadian institutions.

By minimizing their own impact on the environment, universities can lead by example through ecologically sound institutional policies and practices. At the same time universities can generate funds to further interdisciplinary

research and teaching efforts.

Participants agreed that by focussing institutions' attention on sustainable development, mobilizing existing resources, acquiring new resources and developing a supportive climate for interdisciplinary teaching and research, they are beginning to fill the road map that will provide direction to a sustainable society.

Participants also agreed to consider meeting in a follow-up workshop in 18 months to review progress in implementing interdisciplinary teaching and research and to further network and share ideas.

Introduction

University Presidents' Workshop: Learning and Sustainability

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INTRODUCTION

Recognizing the importance of the role of academic institutions in advancing to a sustainable society, the National Round Table on the Environment and the Economy (NRTEE) has held three workshops in this sector. Initially, the NRTEE hosted a workshop for Canadian institutes working in sustainable development, environment and economy (March, 1993). As a result of the workshop, the institutes unanimously agreed to launch themselves as the Canadian Centres for Sustainable Development Research (CCSDR), now housed at the Sustainable Development Research Institute at the University of British Columbia. The institutes recommended that the NRTEE continue to catalyze action in the post-secondary sector through other workshops.

The second workshop hosted by the NRTEE brought together university representatives of 22 different teaching programs in the geography, environmental studies, environmental sciences, rural and urban planning, and engineering faculties (February, 1994). The participants drafted a common statement of principles for sustainable development education and they continue to network electronically. Participants recommended that efforts in the area of interdisciplinary teaching and research could be augmented by top-down support.

As a third initiative, in March of 1995 the NRTEE convened this particular workshop of 20 presidents and vice-presidents of universities to discuss the progress of the university community toward interdisciplinary research and teaching in the context of the role of education in moving society toward sustainability. Participants who took part in the workshop are listed in Appendix 1.

KEY NOTE PRESENTATION AND DISCUSSION

Jim MacNeill, former member of the Brundtland Commission and co-author of its report, *Our Common Future*, provided participants with a context for the workshop. A summary of the presentation is attached as Appendix 2.

Key themes developed by Mr. MacNeill and discussed by the group included the broad thesis of interdisciplinary teaching and research in education; the role of faculties in sustainable development education; and the interaction of universities with granting councils. A summary of the discussion follows.

Because of severe budget restrictions and external pressures it is a huge challenge to address the role of sustainable development in universities. Universities in Canada are facing funding cuts and reorganization, which is forcing them to re-examine the programs that they deliver, the way they are delivered, and the overall organization of the university. University presidents, vice-presidents and deans can play a pivotal role in the reorganization of their institutions. These challenges can be perceived as a tremendous opportunity for universities to implement programs and policies to advance interdisciplinary teaching and research that support sustainable development concepts.

Universities can capitalize on these challenges by redefining themselves in order to enhance the unique role that they can play in transforming to a post-modern environmentally and economically sustainable society.

Universities have the capacity to address complex issues in an interdisciplinary fashion — this is key to achieving sustainable development. Without interdisciplinarity we will continue to make the mistakes of discipline-centred decision making.

History shows that universities are willing to commit themselves to sustainable development goals. The Talloires Declaration, the Dalhousie Declaration and the recently signed Kyoto Declaration all address the role of universities in transforming to a sustainable society. As the Dalhousie Declaration states, the educational, research and public service roles of universities enable them to be competent, effective contributors to the major attitudinal and policy changes necessary for a sustainable future. Moreover the Dalhousie Declaration outlines over 80 recommendations for both the short and long term and at local, regional, national, and international levels.

The changes necessary to help society move toward sustainable development are difficult and will not be achieved overnight. Through these declarations, universities have shown leadership and real commitment. Progress is being made at individual institutions. For example, Brock University has introduced new curricula related to sustainable development and Memorial University of Newfoundland has established a research program looking into the sustainability of coastal communities with Tri-Council assistance.

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The transition to sustainable development requires fundamental shifts in values, in institutions and in economies. Many of the Dalhousie recommendations reflect this. Educational leadership for this transition can begin with each university's mission, curricula and operations. According to the Talloires Declaration, these positive approaches can then radiate into the community, the region and the national and international spheres.

If we envision the transition to a sustainable future as a road map, we already have some of the pieces through documents like Our Common Future and Agenda 21, as well as the university declarations. However, the map of the future is still filled with blank spaces. Universities can provide direction, in addition to improved and interrelated maps in economics, political science, history, social sciences, etc. In addition, universities have the capacity for integrating research from a variety of disciplines. A concrete example is the new student internship at the Université de Québec à Montréal in tourism and sustainable development that is offered in partnership with the International Centre for Policy and Research in Tourism (CIFORT), the World Centre for Higher Studies in Tourism (CMEST) and the Université de Paris. This is one way in which universities can act as best explorers and map makers. Institutions can and are going beyond

the structural and funding problems that continue to challenge them.

The imperatives of sustainable development as they relate to the roles of teaching and research require cross-faculty appointments, interdisciplinary approaches and partnerships. Economic model building must be linked to environmental, cultural and political constraints. The political imperatives of rapid economic development that are driving developing countries can not be ignored. However, rather than simply stating that growth is bad, sustainable development calls for a new kind of growth, growth that increases ecological capital (resources) and is more efficient. Many Canadian universities are entering into partnerships with institutions in developing countries and over two-thirds of the secretariat members of the Talloires Declaration are universities from developing countries.

Sustainable development offers a huge and exciting research agenda for universities. No other institutions have the range of knowledge and expertise to address these issues, as well as the ability to form partnerships and consortiums. Concurrent with action in universities there should be action in the private sector.

One of the difficulties for universities is that the sustainable development debate that is happening on campus is not really about sustainable development but rather environmental conservation. Some say that sustainable development has been captured by either environmentalists or business, depending on whom you ask. Universities can show leadership in stimulating debate that involves the environment and the economy, not one to the exclusion of the other. For example, York University has established a sustainable development lecture series open to students, faculty and the general public.

The sustainable development ethic can apply to all aspects of the institution: teaching, research, management, outreach, etc. The true challenge is to expand and enhance activities directed toward sustainability at a time when university budgets and resources are shrinking. Participants agreed that there is much universities can do to advance society toward sustainable development.

STUDY GROUP DISCUSSIONS

In order to discuss these ideas more fully the participants were divided into two study groups chaired by Geraldine

Kenney-Wallace and Murray Fraser. To give the participants a jumping-off point the groups used the following questions as guidelines:

- I. How do we develop a culture of stimulating and supporting interdisciplinary research and learning for sustainable development?
- II. What are the practical action steps?
- III. What are the mechanisms for restructuring the organization of knowledge in our institutions and its subsequent dissemination through teaching and research?

In the ensuing study group discussions, participants addressed criteria that need to be present for interdisciplinary research and teaching to occur. While barriers were addressed, greater emphasis was placed on the opportunities presented. Although the discussions differed in terms of the specifics, generally there was consensus on the obstacles to achieving sustainable development and interdisciplinary teaching and research. Participants felt the most beneficial portion of the day was the new and innovative ideas for advancing sustainable development at academic institutions. The following synthesis of the discussions of the two groups reflects the diverse backgrounds and experiences of the participants and the institutions they represent.

While the meaning of sustainable development may differ from person to person and institution to institution, participants did agree on the core aspects of sustainable development. Further, participants agreed that sustainable development is the accepted nomenclature in government and the private sector. Therefore a debate on its meaning would not be a productive use of time.

A free-ranging discussion among participants identified the following issues: organizational structures related to the discipline-centred university environment; opportunities to overcome diminishing resources (both human and financial); mechanisms to increase the recognition of interdisciplinary research and teaching; opportunities to educate and inform about the importance of interdisciplinary research and teaching within the university as well as with the general public; methods of encouraging and recognizing good strong interdisciplinary work; and the disciplinary nature of the university in its organization and administration.

common threads of the discussion ran through the following thematic areas: organizational structures, resource

issues, and recognition for interdisciplinary teaching and research. A summary of the discussion of these themes follows.

Appendix 3 contains an important list of initiatives and programs related to interdisciplinary teaching and research already under way that evolved through information exchange during the discussions.

Organizational Structures

All participants agreed that the discipline-centred structure of universities is a challenge for moving towards sustainable development. Organizational structure refers both to disciplines as they are organized and to the allocation of space to those disciplines within the university. Universities are being creative in their approach to this issue. McMaster University in Hamilton has created a series of theme schools that are organized outside a recognized discipline or faculty and bring together students and faculty from various departments around a particular issue. A key factor in the success of this idea is the top-down leadership and the element of encouraging a supportive climate for identifying, advancing and implementing solutions. It is particularly important that the support be visible. Additionally, this top-down support should be mirrored by grass-roots support, which should be encouraged whenever and wherever possible. University leaders recognize that they can not operate and implement these solutions in isolation, hence the need to work in partnership with faculties and disciplines at all levels. Senior leadership in university must be visible, including acting as champions within individual faculties. Deans can create and maintain a supportive climate and encourage faculty buy-in in terms of grass-roots spontaneous actions.

Another possibility is to organize graduate departments along research and teaching theme lines as distinct from traditional organizational structures. Following from this is the possibility of re-allocating office space and changing the physical organization of the university. Mixing people up and changing the traditional discipline-centred organization to encourage flexibility would allow for greater cross-fertilization and innovative ideas. In simple terms, this would encourage informal discussion between the geographer, chemist and linguist. Interdisciplinarity requires the collaboration of all departments. Reorganizing office space may allow that to happen naturally, rather than by mandate.

Participants also discussed renovating existing spaces in older buildings and making use of downtown areas rather than building new structures as a more sustainable means of increasing space. The Harbour City Centre Campus of Simon Fraser University does just that.

Resource Issues

All participants agreed that lack of resources should not be a barrier. Rather it should be an opportunity to encourage new and innovative means of administration. The Talloires Declaration recommends that universities seek large increases in the funding of interdisciplinary environmental research and teaching from non-traditional sources. Research funds are often earmarked for traditional disciplines, which results in the continuing compartmentalization of problems and solutions. The funding available for research on population, environment and sustainable development is a small fraction of what is available for basic science. The University of Calgary has been able to develop creative sustainable development curricula through corporate donors and joint public/private ventures.

6 Participants suggested establishing a proactive office of research to identify opportunities for cross-disciplinary research and funding from alternative sources such as foundations or the private sector. The benefits to the institution could include bringing in funds, attracting faculty, developing partnerships, and exploring projects that may bring national and international recognition to the institution.

A research office could identify private sector opportunities by matching the university's expertise to the private sector's area of interest. This may provide consulting opportunities, which is another way of recouping costs and generating funds. One example of this is the research under way at McMaster University focussing on water and the Great Lakes. Dalhousie University is linking environment and health through its school of medicine and the Camp Hill Hospital in Halifax to address sick building syndrome.

Sustainability is a concept that applies to the management aspects of the university as a corporate entity as well as to its functional role as a teaching and research institution. Efficient conservation programs on campus can save money or possibly generate funds for overhead costs. As well, green audits provide teaching opportunities to link

economics and the environment. Greening the campus will demonstrate leadership by action. A book, titled *Environmental Management on Canadian Campuses* from the University of Calgary, produced in partnership with the Canadian Association of University Business Officers (CAUBO) and the National Round Table, provides direction in this area, as well as examples from across the country.

Another example of collaboration and partnership is the recently established Canadian Council for Human Resources in the Environment Industry, a fully self-supporting organization with input from the private sector and universities. By encouraging sustainable development research, universities may be able to create private sector spin-offs of sustainable technologies that will increase employment, provide research jobs for students, and generate income. Related to this is increased recognition for the university and increased global competitiveness, which not only fosters institutional responsibility but also builds capacity for long-term global sustainability.

The perception that sustainable development has been captured by either environmentalists or the private sector is mistaken. In fact, as Jim MacNeill identified, we have seen a remarkable shift in attitudes in senior business leaders over the past five years. Critical examples of best practices and success stories need to be communicated and encouraged. Building these examples into existing curricula should be a goal of all faculty and can be accomplished without allocating new and scarce resources.

Moreover, sustainable development is clearly on the government's agenda, as demonstrated by the creation of a Parliamentary Commissioner for the Environment and Sustainable Development. A proactive office of research could identify opportunities for government, industry and academic partnerships. As well, there is a chance for universities to provide assistance to federal government departments with the sustainable development plans that they would be required to submit annually under the auspices of the Parliamentary Commissioner.

Finally, the proactive office of research could serve as a communications vehicle within the university and externally. Faculty could liaise with the office before undertaking research to identify others at the university interested in research in that area. This would increase the effectiveness of research and prevent overlap and duplication.

Externally, many universities in Canada are collaborating on sustainable development research activities, such as the centres of excellence proposal in trade, innovation, competitiveness and sustainability that involves Simon Fraser University, the Université de Québec à Montréal and others.

Other creative resource uses include establishing cooperative programs on sustainable development themes and private sector apprenticeships. These initiatives would allow students to get concrete work experiences related to sustainability as part of their education. Participants also proposed student exchanges among institutions in Canada to further expand students' learning experiences and to give them an understanding of sustainable development issues in other parts of the country.

University presidents, vice-presidents and deans could hold meetings with CEOs to explore strategic partnerships as recommended in the Dalhousie Declaration. Senior university leaders who are really committed to sustainable development can use dollars earmarked for overhead to support sustainable development as research leverage.

The University of British Columbia has instituted a surcharge on tuition to generate funds for specific teaching and research projects that focus on sustainable development. Alternatively, an academic advancement initiative fund could be financed through a self-tax. These kinds of initiatives are important because outside sources will support that which the university itself is supporting. Participants felt that there are many good ideas related to creative financing and benefited from the exchange of ideas.

Recognition for Interdisciplinarity

Universities are discipline-administered organizations; therefore it is challenging to recognize interdisciplinary opportunities. The idea of establishing a proactive office of research addresses this concern by pursuing interdisciplinary activities and initiatives. Top-down support will help to break down the myths that interdisciplinary research and teaching are not rigorous or respected. Wise policy support from the administration will visibly demonstrate the importance of this work. The administration can also encourage a greater ability to recognize the value of outreach, partnerships and collaborative work when evaluating tenure and promotion. Cross-appointments for faculty demonstrate a commitment on the part

of the administration to interdisciplinary teaching and research.

University leaders are in a position to have a broad perspective on global problems and are capable of converging various academic disciplines and professional schools on large complex issues. By creating incentives and programs for faculty development and fostering interest in these issues, presidents, vice-presidents and deans will help to bring about a shift in the perception of interdisciplinary work.

Participants discussed the role of granting councils in encouraging and valuing interdisciplinary teaching and research. Funding agencies can demonstrate leadership by encouraging more applied research that addresses real world problems in the community where the university is located, that is, building on local needs and expertise. By adding sustainable development relevance to criteria for grants, in addition to socio-economic relevance, granting councils could encourage practical tools and indicators for achieving sustainable development and also stimulate interdisciplinarity in support of sustainable development. This in turn would increase the prestige of interdisciplinary research and teaching. In order that academic rigour be maintained, standards would have to be set and widely communicated.

Universities themselves can foster support for interdisciplinarity and sustainable development by requiring interdisciplinary team projects and research from students and faculty. By examining the reward system locally, universities can ensure that no disincentives are present. Although there are some genuine disagreements about what constitutes interdisciplinarity, the perceived lack of rigour may be due to an unfamiliarity with interdisciplinary research and teaching. Participants suggested staffing reward committees with individuals experienced in interdisciplinary work and outside experts. Efforts should be made to ensure quality and output for both interdisciplinary work and disciplinary work.

Integrating sustainable development culture will be done differently at different universities. Ideally there should be a spectrum of activities. Activities will range from the work of the joint University of British Columbia/ Canadian International Development Agency Centre for Human Settlements that is looking at sustainable development in Asia, to the Queen's University Environmental Network, which allows cross-disciplinary networking

among faculty via computers.

Both the Talloires Declaration and the Dalhousie Declaration recognize that interdisciplinary teaching and research are tools for achieving sustainable development. Canadian academic leaders, through their proposals, suggestions and ideas at this workshop are moving toward interdisciplinary teaching and research. Universities are restructuring to ensure that the necessary support, encouragement and resources are in place to allow interdisciplinarity and cross-fertilization to occur. An open flow of information among universities will allow continued brainstorming to address these challenges.

CONCLUSION/FOLLOW-UP

Since the publication of the Brundtland Report in 1987, and the adoption of Agenda 21 and its parallel conventions on biodiversity, climate change, desertification and deforestation at the United Nations' Conference on Environment and Development (UNCED), efforts have focussed on defining and operationalizing sustainable development concepts.

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Further, efforts on the part of the university community like the Talloires Declaration, the Dalhousie Declaration, and the Kyoto Declaration demonstrate that the concept of sustainable development has currency for academic institutions. However, participants agreed that declarations of principle were not as helpful as practical actions.

Therefore, the next essential step is to move on to practical applications, the creation of tools and indicators, and effective implementation in various sectors (for example, energy, forests, agriculture, and fisheries) and at different levels: local, regional, national and international.

Universities agree that this is both a daunting challenge and a tremendous opportunity. As Jim MacNeill stated, we must be ready with the maps for the future when the next wave of concern for the environment peaks.

Universities have the necessary capacity to develop the intellectual framework to achieve this goal. Participants, as academic leaders, have the capability to convene academic disciplines on large complex issues, mobilize resources, create incentives and programs for faculty development and, most importantly, to lead by example, thereby moving their institutions toward interdisciplinary teaching and research.

Participants recognized that universities can show leadership through innovation in curriculum design and pedagogy and faculty development. The sharing of inventive ideas among universities and faculty will increase the penetration of these sorts of innovations. Education is critical for promoting sustainable development through improving the ability of individuals to address complex issues.

As well, universities can expand their scope through outreach and partnerships for sustainable development. Partnerships will address many of the resource issues raised by participants and are becoming more and more prevalent at Canadian institutions.

By minimizing their own impact on the environment, universities can lead by example through ecologically sound institutional policies and practices. At that same time universities can potentially generate funds to further interdisciplinary research and teaching efforts. A proactive office of research could be valuable to these initiatives.

The Association of Universities and Colleges Canada (AUCC), as the secretariat for Canadian university presidents, can assist in ensuring that the evolution of sustainable development culture remains high on the agenda of universities. It could also support the important efforts of universities in the area of interdisciplinary teaching and research.

The participation of Learning for a Sustainable Future in the workshop was an important element, given that one of the recommendations of the Talloires Declaration is to establish partnerships with primary and secondary schools to help develop the capability of their faculties to move toward sustainable learning.

Participants agreed that by focussing their institutions' attention on sustainable development, by mobilizing existing resources, acquiring new resources and developing a supportive climate for interdisciplinary teaching and research, they are beginning to fill in the road map that will provide direction to a sustainable society.

Participants further agreed to consider meeting again in 18 months to review progress in implementing interdisciplinary teaching and research in a follow-up workshop and to further network and share ideas. At that time participants will be able to discuss future steps.

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University Presidents' Workshop

March 13, 1995 Ottawa

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Key Note

Address

University Presidents' Workshop:
Learning and Sustainability
March 13, 1995
Jim MacNeill³

Key Note Address

The context for this workshop is premised on three themes: the broad thesis of interdisciplinary teaching and research in education; the role of faculties in education; and the interaction of universities with granting councils. It is assumed that the greening of the university itself is well under way, although at varying degrees depending on the institution.

It is a huge challenge to address the role of sustainable development in universities due primarily to severe budget restrictions and external pressures. Universities in Canada are facing funding cuts and reorganization that is forcing them to re-examine the programs that they deliver, the way in which they are delivered, and the overall organization of the university. University presidents, vice-presidents and deans can play a pivotal role in the reorganization of their institutions.

Universities need to redefine themselves in order to enhance the unique role that they can play in transforming to a post-modern environmentally sustainable society. Universities have the capacity to address complex issues in an interdisciplinary fashion. This is key to achieving sustainable development.

History shows that universities are willing to commit themselves to sustainable development. The Talloires Declaration, the Dalhousie Declaration and the recently signed Kyoto Declaration all address the role of universities in transforming to a sustainable society. So what is holding us back? Why do we keep signing more declarations and doing less?

The answer is that the changes called for are difficult and will not be achieved overnight. There is a need for leadership and real commitment on the part of universities.

Progress is being made at individual institutions, but the pace of progress could be increased.

In order to fully understand the challenge before society in general, and universities in particular, it is necessary to examine the issue of global sustainable development.

Presently, there are several trends unfolding that impact on how we view sustainable development.

1. New Political Environment
 - a. Concept of the nation state
 - b. Greater democratization
 - c. Public sector to private action
 - d. From hierarchies to networks, empowering individuals
2. Globalization of Economic Affairs
 - a. Triumph of the market
 - b. Big winners/big losers
3. Emergence of New Technologies
4. Explosive Growth of Social Demands
5. Natural Environment Crossing Critical Economic Thresholds
6. New Geopolitical and Geo-Ecopolitical Patterns

³ President of MacNeill and Associates, Secretary General and Member of the World Commission on Environment and Development and primary author of its report *Our Common Future*, as well as author of numerous volumes related to sustainable development.

7. Massive Shifts in Socio-Cultural Value Systems

- a. Spread of western consumption
- b. Rise of environmentalism
- c. Rise of fundamentalism
- d. Loss of faith in ever-improving future (conflict, famine, refugees, crisis in confidence)

These challenges and trends cross traditional boundaries and disciplines. They are made to measure for interdisciplinary research and teaching in the academic community.

After reviewing these trends, the Brundtland Commission identified a key question that must be tackled if we are to assure a sustainable future. "If the world's population is allowed to double in the next 50 years, can we increase food production by four, energy use by six and income by eight, without pushing the planet beyond certain critical thresholds that we are only now beginning to understand? That is, can growth on the scale needed to meet future needs and aspirations be guided on a basis that is sustainable?"

The earth can not accommodate the rapid growth required to meet human needs if the growth continues to rest on certain now dominant forms of development which degrade the earth's environment and systematically deplete its basic stock of ecological capital. However, the policies now promoting unsustainable forms of development can be reversed and modified. What is more, they can be modified in ways that not only encourage more sustainable forms of development but also improve productivity, industrial efficiency and international competitiveness at the same time. These changes, however, will require a fundamental shift in values, as well as a major reorientation of institutions, economies, and modes of decision making.

It has been eight years since *Our Common Future* and the map of the future is still filled with blank spaces. Universities can provide direction and better maps in economics, political science, history, social sciences, etcetera. In addition, universities have the capacity for integrating research from a variety of disciplines. Universities should provide the best explorers, yet they have not conquered the structural problems and funding problems that continue to plague them.

Too many academics are focussed on defining sustainable development, too few on finding ways to achieve it. The Brundtland Commission defined sustainable development in ethical, environmental, social and economic terms. The Brundtland Commission also set down a number of conditions that have to be met to achieve sustainability. These are more important. They range from reducing high rates of population growth and certain types of consumption, to increasing efficiency and equity, reducing poverty, reorienting technology, encouraging democracy and supporting human rights.

Sustainable development means living off the interest on our natural capital without encroaching on that capital itself. It requires that we invest massively to build up our declining stocks of natural capital to increase future dividends. It requires strong policies to encourage forms of development that use progressively less energy, water and other materials, and cause less pollution, per unit of output. It means changes in the way we count economic activity — and discount the future.

The Business Council for Sustainable Development (BCSD) made the case for business to address sustainable development. Already countries like Japan and Germany are responding to the challenge by reducing their energy use. While many equate growth with high or increased energy use, sustainable development would involve decoupling energy use from growth. At present, Canada's federal government provides \$5.2 billion in subsidies to the oil and gas industry and spends \$16.5 million on energy efficiency. Canada's fisheries typify the problem of ecological collapse driven by public policies designed to provide incentives for short-term increases in catch at the expense of the capital base. Similarly, in the agriculture sector, into which we put billions of production-tied subsidies, the picture has gone from rosy to grey in terms of our ability to feed an ever increasing world population.

However, many positive changes have begun to take place. Sustainable development has been accepted worldwide as a fundamental value and key objective of nations of all political persuasions and at all levels of economic development. There are round tables in 60 of 180 United Nations countries. Sustainable development institutes are operating worldwide.

Polls everywhere confirm that the cyclical passion of masses of people about the environment stems from very deep roots in awareness, understanding, values and con-

viction. When the polls drop, as inevitably happens, the commitment lives on, dormant perhaps, but capable of rapid and unpredictable ignition. The last peak in the environmental cycle forced change in rhetoric; maybe the next peak will force change in action. However, we must be ready with the road maps and seize that opportunity when the next peak occurs.

Sustainable development offers a huge and exciting research agenda for universities. Few other institutions have the range of knowledge and expertise to address these issues, as well as the ability to form partnerships and consortiums. As well, many students are seeking directions that will integrate lifestyle and employment with concern for the environment and the well-being of people in all parts of the world. It is important to meet these needs in ways that will enhance their opportunities for self-learning.

The potential is there. Yet some argue that the potential is not being realized. One of the difficulties for universities is that the sustainable development debate that is happening on campus is not really a debate on sustainable development but a debate on environment versus development. Some say that sustainable development has been captured by environmentalists, others, that it has been captured by business; it depends on who you ask. Universities can show leadership in stimulating debate that involves the environment and the economy, not one to the exclusion of the other.

Many believe that interdisciplinarity is too simplistic a response to the challenge of sustainable development. But has interdisciplinarity been given a fair trial? University reward structures are tied to discipline-centred research and teaching. If interdisciplinarity is to be given a fair trial, the reward system will have to be changed.

Strategic Imperatives

Strategic Imperatives for Sustainable Development*

Imperatives

1. Policies to reduce high rates of population growth and certain forms of consumption.
2. Growth sufficient to meet human needs and aspirations.
3. Policies to ensure a rapid reduction in the energy and resource content of growth.
4. Policies to increase equity within and between nations.
5. Policies to maintain or enhance basic stocks of natural capital (i.e., live on the interest).
6. Trade policies which reduce environment and resource content of trading patterns.
7. Policies to reorient technologies and manage risk.
8. Institutional change to integrate environment in economic and political decision making. (Harness market forces to work for both the environment and the economy.)

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Also:

Broader concept of national security
Greater participation and democracy
Open information systems

*Adapted from *Our Common Future* by Jim MacNeill

Sustainable Development Concepts

Activity Related to Sustainable Development Concepts at Canadian Institutions

Brock University

Administrative service initiatives in campus greening

Installation of cogeneration facilities

Environmental Policy Institute (Member of Canadian Centres for Sustainable Development Research)

Canada-Thailand institutional linkage project to develop a Centre for Industrial and Environmental Training

Tri-Council Ecosystem Rehabilitation Project

Institutional linkage with Centre for Study of Human Environments, National University of Rosario, Argentina

OPRIG Brock — Student-funded group on environment, social justice and health issues

Niagara Greenways Network

Community involvement in a number of committees and organizations dealing with issues of sustainability

Dalhousie University

Public Administration/Management

Joint School of Resource and Environmental Studies / School of Business

Centre for Environmentally Sustainable Economic Development (CESED)

Clean-up of Halifax Harbour

Sustainability of coastal zones

Sustainability of small island states

Sustainable development integrated in biology, oceanography and economics

Hosted Dalhousie Conference and published Dalhousie Declaration

Greening campus, university-wide sustainable development

School of Medicine / Environment Clinic (sick bldg. syndrome) (tar ponds)

Learning for a Sustainable Future

Sustainable Development Education Program

Six point strategy to integrate sustainable learning in curricula in K-12 school system

McGill University

Faculty of Agriculture and Environmental Sciences

McMaster University

Tri-Council EcoResearch Chair in Environmental Health

Tri-Council EcoResearch Project — "Ecowise" on the rehabilitation of Hamilton Harbour

Institute of Environment and Health

Undergraduate programs: B.Sc. Hons. (Environmental Option); B.Sc. Hons. Geography and Environmental Science; B.A. Hons. Geography and Environmental Studies; B. Eng. Engineering and Society; Theme Schools

Participation in the United Nations University INWEH initiative

CIDA projects on environment and development

Memorial University

Research Program now under way in sustainability of coastal communities (Tri-Council)

Faculty of Engineering developing undergraduate program in environmental science

Environment studies option

Mount Allison University

Environmental Social Sciences/Sciences

Rural and Small Town Program — working on sustainable community development

Queen's University

Queen's Environmental Network — email/cross-disciplinary network

Faculty of Science has environmental options

Tri-Council Chair in Environmental Policy Studies

Master of Public Administration — courses in environmental policy

Environmental science — discipline-based to give credibility for graduate work

School of Environmental Studies to include social side (economics/history...)

Students Taking Responsible Initiatives for the Environment (STRIVE)

Strong sustainable development research in developing world in partnership with CIDA

Simon Fraser University

Resource and Environmental Management Graduate Program in the process of developing undergraduate program

Environmental courses within Faculty of Science / Faculty of Arts programs

Centres of Excellence proposal Trade, Innovation, Competitiveness and Sustainability (TICS)

Harbour Centre Campus City program / urban development

Trent University

Interdisciplinarity well-established

Large undergraduate program in environmental studies

Graduate program in watershed ecosystems

Partnerships with businesses and industry.

Water Quality — 12 industrial partners & NSERC

University of British Columbia (UBC)

Sustainable Development Research Institute

- Greening the Campus: joint projects among students, staff and faculty
- Reconciling Human Welfare and Ecological Carrying Capacity research program
- Five year agreement with Environment Canada to locate a portion of the Environmental Adaptation Research Group at UBC
- Eco-research study on prospects for sustainability in the lower Fraser basin (over 30 faculty and 30 students)
- Trilateral agreement among universities in US, Mexico and Canada to examine sustainable development issues
- Secretariat for the Canadian Centres for Sustainable Development Research (links 14 centres and institutes across the country)

Resource Management and Environmental Studies graduate program

Westwater Research Centre

Centre for Applied Ethics

Fisheries Centre

School of Community and Regional Planning

UBC Press series on Sustainability and the Environment

University of Calgary

Latin America Initiative (CIDA)

Southeast Asia Initiative (CIDA)

Faculty of Environmental Design — professional faculty (300 students)

Private/public sector links

Joint committee between the university and city discussing change at university

Engineering for the environment (designing for sustainable development) — success stories/case study

Corporate donors trigger innovative sustainable development curricula

University of Manitoba

M.Sc. in Natural Resources

Multidisciplinary undergraduate in Faculty of Science

Department of Civil Engineering is developing sustainable development courses as is Agriculture

Planned interdisciplinary programs at both the M.Sc. and Ph.D. levels

Université de Montréal

Environmental Network

Faculty of Science has environmental options

Faculty of Architecture and Design has environmental options

Faculty of Medicine has environmental options

Increasing links between groups

University of Victoria

Environmental Studies Program (interdisciplinary B.A.)

Urban environment and resource geography

Earth and Ocean Sciences

Centre for Forest Biology (tree physiology and regeneration)

IESVic — Institute for Integrated Energy Systems (alternate fuels)

Centre for Environmental Health

University of Waterloo

Faculty of Environmental Studies active for 25 years

Planning/geography/architecture/environment and resource studies departments, interdisciplinary majors in environmental science, environmental engineering

Waterloo Centre for Ground Water Research

Wetlands Centre

Heritage Resources Centre

Earth Observation Lab

New science and engineering building

Walter Bean Canada Trust visiting professorship in environmental studies

Watgreen: highly successful campus recycling program

York University

Masters in Environmental Studies — established in 1968

Bachelor in Environmental Studies and PhD programme — established in 1991

Seminar series on sustainability within FES

University-wide Committee on Environmental Education and Research

Directory on environmental activities at York with over 100 faculty members identified

Centre for Applied Sustainability

Recent large funded internal projects including “University Consortium on the Environment Indonesia, Canada”; “University of Nairobi-York University Development Planning”; and “Canadian University Consortium Asian Institute of Technology”.

Summary

Sustainable Development Institutes Workshop

March 24–25, 1993 Ottawa

Report

Introduction

A workshop bringing together post-secondary institutes of sustainable development was held in Ottawa March 24 and 25, 1993, co-chaired by the National Round Table on the Environment and Economy's Task Force on Education and the International Institute for Sustainable Development. Eleven institutes of sustainable development and two representatives from the funding councils attended the one and a half day workshop. A list of participants is attached.

The purpose of the workshop was to engage the sustainable development academic community in identifying and prioritizing the strategic research issues facing post-secondary institutions in the implementation of sustainable development, and Canada's international commitments under Agenda 21.

The objectives of the workshop were:

1. to catalyze a strategic partnership between the various post-secondary institutes and centres working in sustainable development;
2. to identify the research priorities for sustainable development research in Canada; and
3. to identify the key questions for decision makers.

Following an initial discussion by the participants on the activities and structures of their respective institutes, discussion centred around some of the common opportunities and challenges shared by the various institutes. The remainder of the workshop was devoted to identifying strategic research priorities; discussing some of the obstacles to sustainable development research; the role of institutes and university research; and the relationship between research and policy.

Priorities

The workshop helped to further catalyze the participating institutes in their attempt to move into this new world of sustainable development research, which represents an entirely new approach both to university research and to what has been traditional environmental research. Sustainable development research by necessity is broader and more integrative than environmental studies, and, therefore, has a completely different orientation to the research agenda. The discussion about research priorities made this new approach very clear, and the set of themes which emerged illustrated that this revolutionary approach to university research has three important characteristics: it is applied research; it is policy-relevant; and it involves new strategic partnerships and stakeholder processes.

The institute directors identified strategic sustainable development research issues which they felt to be key priorities for the decade. They decided against prioritizing the issues or developing a common framework at this point, in order to maximize the limited workshop time available. These individual topics could be roughly grouped into the following categories which are presented here for summation purposes only.

One theme which emerged was the integration of environment and economy within the broader context of social sciences and humanities, i.e., linking ecological realities with the broader economic and human spheres within which our societies operate. A second theme was growth and the linkage of ecological constraints with development imperatives, resolving the apparent contradiction between them. Third, there should be explicit attention to the way research is produced and used; that is, there is a need for research to make a difference in the world. A fourth theme is the restructuring of institutions. A particularly important example in this context is the

reform of universities so that more of this multidisciplinary and applied policy-relevant research happens. Fifth was the relationship between global interdependence and local self-reliance, which includes, for example, biodiversity, carrying capacity and issues of resource management. Sixth was the nature of development imperatives, including the distributional effects of sustainable development. A seventh theme was the processes for social change.

The discussion of obstacles to sustainable development research included institutional barriers, such as administrative structures; the adherence to disciplines; lack of communication; and the incentive system for promotion and publishing constraints.

The participants were unanimous in their praise of Tri-Council ecoresearch funding; it has played a very important role in stimulating research in this area and in giving a signal that this type of research is valued, since traditionally it has been very hard to get funding for multidisciplinary projects. But even if unlimited money were available, a great deal of pain, effort and frustration goes into a proposal. This is particularly the case in sustainable development research because one has to talk to researchers in other disciplines who often speak a different language, use very different methods, and have different ideas of what constitutes good research. Different disciplines not only confuse each other with their own terms but may use the same terms understood in an entirely different context. Given the difficulty of preparing the project proposals for Tri-Council funding, the recent cut-backs will result in a much lower success rate for acceptance, and many researchers may simply elect in the future to go the safe route and continue with traditional research.

At universities, the big obstacle is the lack of institutional support, which is not restricted to money and includes the reward and incentive system. The incentives just do not exist, for junior faculty in particular, to undertake "risky" research, and the reward system is stacked against them because of the need to publish in disciplinary journals. Faculty disincentives and, indeed, insecurity about getting involved in sustainable development research exist. It is seen as inherently different and risky, given the low value placed on this kind of research both by their peers and some university administrations.

Role of Research

Discussion ensued about whom and what sustainable development research was for, and whether research in this area was reactive or proactive in terms of societal developments. Some felt that the role of the institutes was to help policy makers and policy planners. Others felt that the first focus for research should be business and industry, since that was where implementation was actually taking place; and that research should focus on questions that directly impacted on society. There was some discussion about whether the role of researchers was simply to provide policy makers with research results. Others suggested that academics give policy makers research results as well as policy analysis; and that advice was quite different from analysis. However, advocacy research was becoming much more accepted and conducted more often, as distinct from the simple provision of information and analysis. Analytical research and advocacy research did not need to be mutually exclusive within institutes; there was a need to produce different kinds of research geared to the particular needs of the audiences.

Perhaps the focus should be on how the research information was used, and how it influenced decision makers, regardless of the intended audience. For example, there was some concern about research contracts with governments who then used the data to their own ends or, filtered, or withheld information. Perhaps the links, and lack thereof, between government, industry and academia needed to be reconsidered and different kinds of relationships formed here and also between academia and the public community.

Because sustainable development was still at the ideological stage, researchers should therefore be questioning sustainable development both intellectually and theoretically and communicating this in their partnerships with other sectors. That is, sustainable development research was unique in that it was self-referencing; researchers had to be aware of the process of research and, at the same time, had to consider the policy implications. By definition, everything the institutes were involved in necessarily related to the process as well as to the substance of sustainable development principles.

Further Action

There was unanimous agreement to form the Canadian Centres for Sustainable Development Research and to continue meeting to further refine strategic research priorities in Canada.

The purpose of the group would be

1. to continue the collaboration between post-secondary sustainable development institutes;
2. to promote the necessity for basic ecosystem research within the university administrations and the wider community, and to increase the incentives and funding for such research;

3. to foster links and greater collaboration with government, industry and non-government organizations;
4. to advance the work of researchers currently working on interdisciplinary and ecosystem research, wherever possible.

Participants agreed that the Sustainable Development Research Institute at the University of British Columbia should take the lead in the further organization of the group.

APPENDIX 4

Participants

Sustainable Development Institutes Workshop

March 24-25, 1993 Ottawa

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Common Principles

Statement of Common Principles for Interdisciplinary Environmental and Sustainable Development Education and Research Programs in Post-Secondary Institutions

Humans are confronted with a wide range of interrelated environmental problems on a planetary scale. We have passed the stage of simply raising awareness about these problems, and must now move into a new phase of issue-oriented critical analysis of the causes of the problems, and action to solve them. Post-secondary institutions can address these problems through teaching, research, and linkages with the local and global communities.

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Finding solutions to the pervasive and accelerating deterioration of our environment — the common objective — requires interdisciplinary approaches which bridge the natural sciences, the social sciences, the humanities, and professions such as law, medicine and engineering. It requires people who can combine specialized knowledge with a generalized understanding of the complexity and interrelatedness of environmental issues.

There are many effective models for post-secondary programs on the environment. The common objective of our interdisciplinary programs is to provide students with knowledge about environmental issues and problems, and the skill to use that knowledge in ways that contribute to increasing the integrity of life-support systems.

Common principles of programs include:

1. affirmation of the traditional educational goals of literacy, numeracy, depth and breadth of understanding;
2. the nurturing of an attitude of respect and openness toward the intellectual contributions of others and towards nature;
3. emphasis upon making active connections both within and beyond the university, which result in progress toward our goal of increasing the integrity of the planet. These connections might be with other academic units, or with individuals and agencies in municipalities, government ministries, or local, national or international organizations;
4. avoidance of the entrenching of a certain subset of knowledge or skills as being "environmental"; in other words, to allow the issue or problem at hand to define the disciplinary expertise which must be brought to bear. Having students gain experience with interdisciplinary approaches to problem solving is a core pedagogical approach realized through practicums, field placements, group work, etc. This implies flexible, dynamic, and adaptable academic units, and militates against an excessively vertical or hierarchical institutional arrangement; and
5. affirmation of the need and desire to work in close cooperation with traditional areas of specialization and disciplinary endeavour, without compromising an interdisciplinary orientation.

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Post-Secondary Environmental and Sustainable Development Teaching Programs in Canada Workshop February 11-12, 1994 Toronto

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National Round Table
on the Environment
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Table ronde nationale
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