

**Proposal to Establish a
Regional Centre of Expertise
on Education for Sustainable Development
in Saskatchewan, Canada
(SK RCE on ESD)**

**Submitted to the
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(UNU-IAS)**

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1. Proposal Background

This proposal is a formal application to the United Nations University to establish a Regional Centre of Expertise on Education for Sustainable Development in Saskatchewan, Canada. It affirms a recognition of the role of education in achieving regional sustainability as well as the region's desire to advance the local, regional, and global goals of the United Nations *Decade of Education for Sustainable Development* (2005-2014) in co-operation with other Regional Centres of Expertise. The development of this proposal is part of an inclusive process that brought together a broad cross-section of individuals and organizations interested in advancing education for sustainable development (including formal, informal, and non-formal education).

The formal process towards establishing a Regional Centre of Expertise on Education for Sustainable Development (RCE on ESD) began in February, 2005, with a presentation of the concept at the University of Regina by Charles Hopkins, the UNESCO Chair at York University, Canada, who is coordinating the development of Regional Centres of Expertise in North and South America on behalf of the United Nations University. On August 25, 2005, individuals and organizations interested in ESD from the prairie region of Saskatchewan were brought together at the University of Regina to explore what a Regional Centre of Expertise might look like that took advantage of local strengths as well as the sustainable development educational goals of participants. More specifically, the meeting sought grassroots, regional direction concerning how a Regional Centre of Expertise could be structured that best facilitated these educational activities and desired collaboration among participants. The interests and capacities of individuals and organizations in education for sustainable development were identified as well as the kinds of resources that could potentially be offered in creating a Regional Centre of Expertise. Based on this information and direction, a draft RCE proposal was developed. This proposal was prepared in time for a second visit by Charles Hopkins to the University of Regina on November 2 and 3, 2005, and the University of Saskatchewan on November 4, 2005. At this time the proposal was reviewed by workshop participants. Based on an analysis of participant interest in ESD and examining existing ESD initiatives, 6 ESD issues were identified as a regional focus for the SK RCE in December, 2005, along with 2 overarching themes. A subcommittee was struck to develop a proposed governance model for the SK RCE building on comments from the earlier workshops and feedback from key stakeholders. This draft model was completed in May, 2006, and incorporated into the draft SK RCE proposal. The draft proposal was subsequently sent out for further comment and review by SK RCE participants with the process to develop the proposal completed in July, 2006.

Faculty and administrative staff at the University of Regina in Regina, Saskatchewan, the University of Saskatchewan in Saskatoon, Saskatchewan, and the Saskatchewan Institute of Applied Science and Technologies (SIAST) have facilitated the development of the RCE proposal in conjunction with the active participation of regional leaders in formal, informal, and non-formal education. *Appendix A* includes contact information for the proposal as well as a listing of individuals and organizations supporting the development of the RCE.

2. Regional Description and Sustainable Development Challenges

Area description

South central Saskatchewan is the most densely populated area of Saskatchewan (pop. 995 000), where most people live in the city of Saskatoon (pop. 205 000) or Regina (pop. 190 000). The cities are located about 250 km apart with a busy highway (Louis Riel Trail) linking the two cities. There is regular travel between the cities for business, education and family visits. Besides personal cars, people use the Saskatchewan Transportation Company, which runs daily buses between the cities, and there are also regular flights. The two largest universities in Saskatchewan are the University of Saskatchewan in Saskatoon (19 000 students; 7350 faculty and staff) and the University of Regina (12 500 students; 1200 faculty and staff). Between Regina and Saskatoon there are a number of smaller communities in which farming is an important industry. Among those communities is Craik, which has become an important sustainability hub due to its newly built Eco-Centre, which provides opportunities for formal, informal, and non-formal education, and is a natural meeting place. Both cities are included in the moist mixed grassland ecoregion, which together with the mixed grassland southwest of Regina include most of the remaining native prairie in Canada. Both Regina and Saskatoon have strong connections with the aboriginal community and Regina is also the location of the First Nation University of Canada, an institution federated with the University of Regina. A sampling of current regional activities in the area of Education for Sustainable Development by major stakeholders can be found in *Appendix B*.

Challenges and Opportunities in the Saskatchewan Region

A variety of organizations including educational, business, government (municipal, provincial and federal), and non-governmental organizations, are working to promote sustainability in our region. This has included a focus on ecological sustainability, sustainable land use, and sustaining our population through meeting its basic social, economic, and cultural needs, and sustaining prairie institutions themselves. Many organizations are already well connected with each other, due to the small size of both Saskatoon and Regina and the short distance between them. We are however wanting to intentionally and systematically expand and improve these connections to create a larger and more active network of those engaged in education for sustainable development.

The Saskatchewan prairie region faces significant sustainability challenges. These are highlighted in the educational themes for sustainable development chosen for the proposed SK-RCE (See Section 4). Saskatchewan is confronted by significant ecological pressures associated with climate change and from primary resource extraction and production including a history of intensive land use. It faces social challenges due to poverty and vulnerability especially among First Nations peoples as well as a long history of migration of population from rural to urban areas and outside the region. Economic pressures include a long-standing depressed rural economy, a historic lack of industrial development, and significant exposure to fluctuations in global prices for exports. In

terms of sustaining infrastructure, the region needs to address both declining infrastructure in inner city neighbourhoods and rural communities as well as transportation networks connecting the region. Sustainable alternatives that simultaneously can address and respond to these pressures are needed, especially those able to promote sustainable livelihoods that take advantage of local opportunities.

Only with the help of everyone's expertise, including the educational strengths and resources of the region's schools, technical institutes, colleges, and universities in partnership with other organizations interested in education for sustainable development, can we make it a leading example of sustainability and a place where people feel motivated to take on more healthy and sustainable lifestyles.

3. Regional Vision and Approach to ESD

Education for Sustainability

The Saskatchewan Regional Centre of Expertise on Education for Sustainable Development (SK RCE on ESD) seeks to transform education for sustainability in our region. Education is broadly understood to include formal education (such as primary, secondary, and post-secondary education) as well as informal and non-formal education (such as the private media and public education by non-governmental organizations). *A Framework for Environmental Learning and Sustainability in Canada* defines the three types of education as follows:

- *Formal Education:* Education through the school systems from kindergarten to the end of high school as well as some aspects in colleges and universities.
- *Non-formal Education:* Public awareness activities by organizations outside of the school system (e.g., Environmental Street Theatre).
- *Informal Education:* Educational activities provided by media (e.g., documentaries on radio and television)¹

Education at all times respects the autonomy and dignity of the learner. Education for sustainable development aims at promoting reflection and discernment in our region that helps us identify and pursue paths to sustainability. Such paths lead to ongoing improvements in quality of life while sustaining healthy ecosystems. They promote active environmental stewardship, social justice, and intergenerational equity.

Education for sustainability requires literacy and a capacity to critically and creatively reflect on the ecological, social, and economic challenges and opportunities facing our region. In this light we must ensure that our region provides access to quality education which includes quality basic education, higher education, adult education, and other opportunities for life-long learning. Education for sustainability requires an integrated, interdisciplinary, and problem-based approach. It addresses the ecological, social, and economic dimensions of these problems by situating them within geographic, temporal, and institutional contexts. In so doing, education for sustainable development promotes educational opportunities that are locally relevant and culturally appropriate. The issues of sustainability that are central to a region serve as focal points and pillars for defining ESD strategies. Education for sustainability in turn identifies development paths that *simultaneously* meet the ecological, social, and economic outcomes of sustainability while promoting locally appropriate, sustainable livelihoods.

In light of these considerations, we recognize advancing education for sustainable development will require significant research into new educational approaches appropriate to our region. Advancing ESD will also require opportunities for educators to

¹ Environment Canada, *A Framework for Environmental Learning and Sustainability in Canada* (Ottawa: Government of Canada, 2002), p. 5. Available from: http://www.ec.gc.ca/education/framework/framework_overview_e.htm

develop and implement new regional models of education. An RCE is, among other things, a research project that will help meet these needs. It enables members to learn from each other and ultimately have a better understanding of ESD. Additionally, it helps to foster communication among different partners given the nature of the RCE's work and because all three aspects of the SD equation (the social, economic and environmental dimensions of sustainability) need to be considered. This allows new partnerships to develop where they hadn't in the past, both at the regional level and in creating a global learning space for ESD.

In advancing ESD the SK RCE will make use of approaches that are (1) regional, (2) strengths-based, and (3) institutional.

A Regional Approach

A regional approach to education for sustainable development affirms the potential of bringing together urban and rural areas (and the respective contributions of each) to multi-disciplinary and multi-organizational collaboration. At the same time it recognizes and affirms the ecological opportunities and constraints associated with our geographic context. A regional approach fosters relationships between human communities and between human and non-human communities and ecosystems. These relationships produce positive synergies that will foster the health of our communities and ecosystems and enable individuals and populations in our region to flourish.

A Strengths-Based Approach

In achieving our regional goals in education for sustainable development we build on our regional strengths. Our communities have a history of being caring, progressive, and forward thinking. In the past we have structured our communities and educational institutions to meet a broad range of economic, social, political, and ecological challenges. We see the innovation needed in education for sustainable development building on this history of creativity and inventiveness. Our institutions of formal education at the primary, secondary, and post-secondary level have already taken significant steps in education for sustainability. In the area of informal and non-formal education we recognize our region has many unique opportunities for experimenting in ESD. This is tied to the diversity of institutional forms in our region. Our First Nations communities provide a rich source of wisdom, knowledge of our region, and commitment to stewardship of the land. Saskatchewan has an innovative civil service that historically has championed such things as universal healthcare. Our business sector includes family enterprises, other small and medium sized enterprises, state enterprises, and co-operatives. Our region has a strong and diverse non-profit sector and the highest rates of volunteerism in Canada.

In the area of informal education, our region has a diversity of media forms. These include private media (television, newspapers, and radio), smaller rural and urban community newspapers, state media (both television and radio), co-operative media (both co-operative newspapers and a co-operatively owned cable company), and non-profit

media (such as a community radio station). In addition, our post-secondary institutions offer specific training in the area of journalism and communications. For example, the University of Regina has a well-established School of Journalism that recently celebrated its 25th anniversary. This diversity of media forms, many of which have already engaged in programming related to sustainable development, allows for considerable experimentation with informal ESD.

In addition to this diversity of organizational forms and media, we recognize that we already have many critical networks already in place between organizations, especially educational organizations, upon which we can continue to build relationships. Our region participates in many longstanding global networks due, in part, to its history of global trade in agriculture and other resources and its movement of people.

In using a strengths-based approach we see our RCE on ESD primarily adding value to existing knowledge and educational activities for sustainability in our region (rather than drawing resources away from organizations). It will seek to share and build upon the region's knowledge and experience in ESD. It will identify possible synergies and facilitate new constructive relationships in our region and with other RCEs at a global level. In its role as serving and facilitating and in order to grow its capacity to respond to existing and emerging regional strengths in ESD, the RCE will maintain a flexible structure whose form follows its function.

An Institutional Approach

In order to ensure broad based education for sustainable development in the region, the RCE will engage actors from formal, non-formal, and informal sectors of education. To do so, the RCE will take an institutional approach that recognizes the value of institutions and the organizations that operate within them. Organizations in this region have significant human, physical, and financial resources to contribute to ESD. Organizations have distinctive expertise based on their functional specializations, capacities to operate at different geographic and temporal scales, and mandates related to education. An institutional approach will enable the RCE to build on these capacities. It will enable the RCE to reach a broad public over the course of their lifetime in a way that addresses all people's needs, regardless of their gender, age, or social status.

An institutional approach to ESD requires recognizing the contributions of a range of organizations. This includes the recognition of the central role played by *formal education organizations* at the elementary, secondary, and post-secondary levels. The RCE affirms the need for the involvement and leadership of institutions of higher education in ESD in light of their capacity to engage in curiosity-based, investigator driven scholarship. Sustainable development opens up new horizons of research activity by universities that builds on their breadth and depth of knowledge. Universities through their academic freedom have the capacity to speak out and engage in research that others might not be able to engage in and to go where others might not be able to go. They have the institutional autonomy to experiment by applying ESD in advancing campus sustainability, modeling sustainable practices, and showcasing these transformations in a

tangible way to the broader community through projects and demonstrations.

The RCE recognizes the role of *households and families* as key decision makers impacting regional sustainability particularly through the meeting of basic needs such as energy, food, and housing. ESD must also build on the culture, symbols, traditions, and heritage of the region and the organizations that hold this knowledge such as museums, libraries, and heritage sites. It affirms the centrality of *First Nations communities* and the strengths of the region that derive from its diversity of peoples and their understandings of place reflected in its *cultural organizations*. It seeks to build on the traditions of *faith-based organizations* within the region particularly as it relates to ideas of stewardship and the potential role in ESD of faith-based educational organizations. The RCE also affirms the importance of *trades, artists, and professional organizations* in ESD whose mandates are central to sustainability (for example, in engineering, architecture, culture, education, health, or justice) and the training and skills provided with their respective specializations. It also recognizes the importance of individuals and organizations who act as *champions and leaders* of sustainable development in the region.

Government organizations within the region at the municipal, provincial, national, and international level have been key proponents of sustainability and are central in the administration and funding of public education including its state universities. All levels of government have roles tied to their political accountabilities in educating and empowering citizens in the region for sustainability. Governments have a role to establish regulations promoting sustainability and a mandate to monitor progress in sustaining the region's human and natural capital. The Government of Saskatchewan, in particular, plays a central role given its constitutional responsibility for education, and the range of commitments made by SK Learning to education for sustainability. The RCE also affirms the central role of *market organizations* in ESD. Business plays a key role in ESD through corporate education and training and informally through the private media and marketing. Given the dominance of market institutions in the global economy, ESD in the region must build wise consumers and facilitate the development of sustainable business structures that build value through green processes and practices. ESD will require identifying and promoting sustainable livelihoods in the region through sustainable enterprises that meet basic needs and quality of life outcomes, sustain the assets on which our livelihoods depend, and minimize risk, vulnerability, and uncertainty for individuals. The RCE sees broad based ESD providing significant opportunities for new small and medium sized enterprises to develop in our region. Finally, *non-profit organizations, service clubs, and other civil society organizations* build community capacities for ESD having been structured around autonomous, community directed concerns such as literacy or the environment. They are central to ESD by providing cutting edge knowledge of issues impacting regional sustainability. They also can act as a direct conduit for volunteer activity, channeling the expression of local passions and commitment to sustainability.

4. Regional Issues in ESD Identified by the SK RCE

Six issues along with two cross-cutting themes were selected to serve as an initial focus of educational activity for the SK RCE on ESD. These areas were identified by carefully examining the common issues in ESD that were brought forward at two regional workshops held on August 25 and November 3 of 2005, and have been subsequently commented upon by RCE participants.

Cross-cutting themes:

- Sustaining rural communities
- Educational Approaches for Regional ESD

Issues:

- Climate Change
- Health
- Farming and Local Food Production, Consumption, and Waste Minimization
- Reconnecting to Natural Prairie Ecosystems
- Supporting and Bridging Cultures for Sustainable Living and Community Building
- Sustainable Infrastructure including Water and Energy

In identifying issues, the RCE attempted to draw on areas of historic strength and achievement in the region, as well as those presenting significant challenges and opportunities in its communities. Saskatchewan's challenges include those linked to a variety of ecological, geographic, economic, social, and cultural factors. The chosen themes directly address the *sustainable livelihoods* focus in ESD of the RCE, specifically the ability of individuals to improve their well-being and quality of life through building up their livelihood assets and capabilities in light of the region's organizational and institutional context. At the same time ESD in these theme areas will reduce the risks to which regional livelihoods are exposed as well as addressing individual poverty and vulnerability. It is hoped that ESD initiatives in these areas will help create a general understanding of what it means to live well in our region in a way that is sustainable over the long term and how this might be achieved. The choice of specific ESD themes as a focus for the SK RCE is intended to help mobilize the voluntary activity and contributions of individuals and organizations in the region. It also allows for focused and strategic ESD activity and research in these areas. It is anticipated that new themes will emerge and be formally adopted over time.

The following expands on each issue, outlining why it is regionally important. We recognize that each of the six ESD issues identified is not (and cannot be) understood in isolation, but that there are many conceptual overlaps. In addition, concrete initiatives in Education for Sustainable Development may very well creatively seek to address several issues (or possibly all!) at one time. In addition to the six issues that were identified, the two cross-cutting themes that were raised by participants need to be addressed in

formulating any ESD initiatives. These two themes, the survival of rural communities and educational approaches for ESD, are discussed subsequently.

Issue: Climate Change

The Saskatchewan prairie region has been identified as one of the most vulnerable ecosystems to climate change. Due to its already naturally dry climate, this area is vulnerable to small changes and extreme weather conditions associated with climate change. For instance, prolonged droughts or sudden floods are likely to have a devastating effect. Heavy cultivation and fragmentation of land by human activities throughout large parts of Saskatchewan increase the impact of extreme conditions due to erosion prone cultivated fields and heavy water use for irrigation.

While the region is highly vulnerable to climate change it is, at the same time, a significant contributor for a number of reasons. The largest increase in contributions of greenhouse gas emissions has occurred from industrial development in Saskatchewan. New forms of development that do not have these impacts or minimize these impacts need to be explored. At the same time, transportation in Saskatchewan makes use of substantial fossil fuels. The great distances between cities and towns in Saskatchewan and the lack of frequent passenger trains both between and within communities makes personal transportation a further source of CO₂ emission and air pollution. Highly mechanized, intensive agriculture focused on exports from the region also contributes substantial transportation emissions. As a landlocked province lacking waterways for shipping, transportation costs and fossil fuel use have historically been high. Since everyone in the region contribute to CO₂ emission in a diversity of ways, each one of us can do his or her share in reducing it. We therefore believe that education on climate change is an important issue in the Saskatchewan RCE.

Issue: Health

Saskatchewan has a rich history as a leader in health care. Saskatchewan is home to a large number of Aboriginal medicine people and healers, whose sacred knowledge is threatened. Aboriginal culture relies on the oral tradition of passing knowledge from one generation to the next, a tradition that is currently endangered as a result of the misappropriation of Aboriginal culture and the influx of Aboriginal youth to urban centers. This rich medical and health knowledge must be properly revered and nurtured for the future. The First Nation's ideal that medicine is not for sale complements the Western medicine tradition in Saskatchewan found in the principles underlying Medicare. Tommy Douglas introduced universal hospitalization in Saskatchewan in 1947. Douglas introduced to Canadian culture the idea of universality in health care. In 1947, he stated that hospitalization fees were to be "... paid out of the treasury. Instead of the burden of those hospital bills falling on sick people, it is spread over all the people." Twelve years later (1959), Douglas announced the coming of the Medicare plan that would be universal, pre-paid, publicly administered, provide high quality care, including preventive

care, and be accepted by both providers and receivers of the medical service. The issue of Medicare is revisited time and time again by politicians and is Douglas's legacy to Canada, providing egalitarian health care to all citizens, regardless of race, gender or social status.

Human health is central to developing human capabilities and promoting well-being, both essential to sustainable livelihoods and sustainable development. The legacy of Saskatchewan in innovation in health continues with commitments to Primary Health Care by regional health providers along with formal commitments by the Province of Saskatchewan to the concept in 1993 and reaffirmed in 2001. Primary Health Care was usefully defined in 1978 in the *Declaration of Alma-Ata* from the international conference convened by the World Health Organization. It involves a commitment to health for all as a fundamental human right and encourages active promotion of health and well-being along with prevention of illness. Health is seen as a responsibility of everyone and, as such, requires broad education for citizens. Individuals are to play an active (versus passive) role in their own health with health issues being addressed where people live and work. Saskatchewan has also developed the Saskatchewan Health Research Foundation (SHRF) whose research foci are those “areas critical to the health and well-being of Saskatchewan's population” The SHRF has identified Saskatchewan’s provincial health research priority areas, some of which the RCE will work towards synergistically. Further, the province of Saskatchewan has recently (re)approved midwifery. This revitalization of midwifery represents a further shift of the Saskatchewan population towards their ownership over health concerns. Finally, population health in the region is integrally linked to the health of our local ecosystems with individuals needing to understand these relationships. Broad based education on the environmental impacts of air pollution, water pollution, and toxic chemicals in our communities are central to developing regional strategies to advance population health.

Issue: Farming and Local Food Production, Consumption, and Waste Minimization

With the centrality of market institutions in the modern global economy, building wise consumers and business practices that simultaneously meet economic, social, and ecological bottom lines is central to achieving sustainability. The full life-cycle costs of products and services need to be understood by all if market prices are to reflect their true costs rather than offloading externalities on other organizations, communities, and future generations. At the same time, many livelihood opportunities are available at a local level to meet needs outside of the market (for example, through voluntary activity or individual production aimed at meeting one's own needs). A focus on wise production, consumption, and waste minimization enables important linkages to be made between rural and urban communities and is facilitated by a regional approach to ESD.

Within the Saskatchewan RCE, food production has always been central to Saskatchewan livelihoods. Saskatchewan was historically called the “breadbasket of the world” based on its wheat exports. However, agricultural livelihoods face the many challenges of low prices, high input costs, a high dependence on increasingly scarce fossil fuels, and

ecological challenges associated with crop monocultures and soil degradation. These challenges also present opportunities to move from highly mechanized agriculture to more sustainable forms that focus on local food production and farm self-sufficiency. Similarly, opportunities exist to reduce vulnerability and risk by reorienting ranching and other forms of livestock production away from intensive industrial processes to structures that are more profitable for individuals and family farms. ESD can help consumers understand where their food is coming from with greater transparency between farmers and consumers. Consumers want to know more about food safety, nutrition, treatment of animals, environmental impacts, and working conditions including wage levels. ESD can enable more healthy food consumption where the true costs of food are reflected in fair prices for local producers mediated through new regional relationships. Local food production can also enable individuals and communities to promote their own food security and self-sufficiency by acting in an integrated way as producers, consumers, and managers of wastes. Consumers can be empowered with the knowledge needed to discern food quality along with the skills needed for nutritious food preparation of basic foodstuffs.

Issue: Reconnecting to Natural Prairie Ecosystems

As people move from the countryside into cities and suburbs their relationship with nature and the environment tends to decrease. Several studies have linked values and lifestyle choices to environmental knowledge, which is why it is important that people living in cities, towns, and rural areas are exposed to natural settings representative of the biome in which they live. This is especially important in the prairie region of Saskatchewan that has one of the most transformed landscapes on the planet due to intensive agriculture. Alternative landscaping using native plant species in urban centers and rural communities would increase our familiarity with the nature of Saskatchewan. The use of native species in city landscapes such as parks would also provide opportunities for formal and non-formal education at all levels and supplement educational efforts in ecology, botany, and environment studies. Individual can also advance exposure to natural prairie ecosystems through knowledge of xeriscaping. Landscapes of native plant species within city, provincial, and regional parks would also provide people with a sense of place, one that reminds them about where they live.

Issue: Supporting and Bridging Cultures for Sustainable Living and Community Building

Canada's national identity is based, in part, on a rich and well supported multi-cultural social structure. In opposition to the US model of the “melting pot”, Canadians have chosen the “mosaic” ideal of cultural diversity. Saskatchewan is an excellent representation of the whole. Saskatchewan and Canada represent a mixture of people of various races, colours, creeds, religions, languages, nationalities, ethnic origins, and places of birth. This diversity is recognized by the Multicultural Council of Saskatchewan (MCoS) that was established in 1975, serving as the umbrella organization

for multiculturalism in the province. MCoS notes that multiculturalism “promotes the understanding, respect, appreciation, and acceptance of all people as equal in our society”.

The members of the proposed SK-RCE recognize that Saskatchewan is host to many Aboriginal and immigrant cultures, each with different knowledge and strengths related to sustainability in this region. For instance, reverence for and stewardship of the land is a basic principle of Aboriginal culture. Historically, Saskatchewan's nomadic First Nation's people were confronted with constant change (i.e. drought, flooding etc.) that presented the ongoing challenge of adaptation. The idea of quick changes as a way of coping with local environmental stresses is one to be fully understood and embraced for those who wish find sustainable solutions while living in Saskatchewan. Holistic, culture-centred understandings are an alternative to purely reductionist approaches to addressing the social, economic, environmental, and health challenges in the region, many of which have roots going back to the industrial revolution. As an RCE in Saskatchewan we are in a strong position to build a community of communities, bringing together a variety of approaches and capturing synergies to build sustainable livelihoods for everyone. At the same time ESD in the SK-RCE must consciously engage and address issues of poverty, vulnerability, and inequality (both of opportunity and resources) confronting different cultural groups, especially First Nation's people in the province.

Issue: Sustainable Infrastructure including Water and Energy

Saskatchewan is characterized by extreme temperature variations from winter to summer and other extreme climatic conditions. This creates challenges for sustainable and efficient building design, especially one's that conserve energy. At the same time, the Saskatchewan prairies face significant water challenges and infrastructure costs associated with these water issues. Good housing is also central to people's well-being, their sense of belonging within a community, and their ability to sustain a livelihood. With the cold climate, Saskatchewan people must spend a considerable amount of time indoors creating a greater need for healthy homes and buildings.

Feeling at home in the prairie region in ways that economically provide for a high quality of life can help stem rural to urban migration and migration out of the province—a historic challenge of the region. Buildings on the prairies have not traditionally been highly customized to local conditions nor make use of local materials. Education about what buildings and building materials are sustainable and how to build sustainably on the prairies creates livelihood opportunities in the region. Rural communities are also facing deteriorating infrastructure, especially water infrastructure, over the next 10 to 15 years that can be addressed by sustainable infrastructure initiatives. It also affords opportunities for cities to create more affordable housing and revitalized neighbourhoods. If communities are to become sustainable, citizens collectively need to be educated about the full life-cycle costs of their public and private infrastructure as opposed to merely upfront costs.

Cross-Cutting Themes

Activities addressing each of the above six ESD issues will also seek to address the following two cross-cutting themes.

Theme: Sustaining Rural Communities

Saskatchewan has faced significant challenges sustaining its rural communities over the last several decades. Low agricultural prices and a depressed rural economy have meant substantial migration from rural to urban areas, frequently out of province. The ability to sustain rural communities is an essential precondition for regional sustainability. At the same time, smaller communities in the region have a greater opportunity to more rapidly experiment with new sustainable technologies and ways of living than larger urban centres. A sustainable livelihoods approach is particularly important in sustaining rural areas as it recognizes the historic ability of individuals to diversify livelihoods with a diverse resource base..

Theme: Educational Approaches for RCE Initiatives

Participants involved in developing the SK RCE identified the following issues in formal, non-formal, and informal education to be addressed in RCE initiatives.

Formal Education:

RCE on ESD initiatives should:

- emphasize the importance of literacy including specific kinds of literacy such as ecological literacy, and that needed to promote sustainable living in the region
- develop and employ alternative teaching methodologies, tools, and strategies appropriate to the region
- help integrate all aspects of sustainability, especially the need for environmental education, into the curriculum at all levels (including business and professional training) in a cross-disciplinary manner
- make possible hands-on educational activities in both classrooms and non-classroom settings (especially outdoor, natural settings)
- provide gathering points for discussion between educators and the wider community

Non-Formal and Informal Education:

RCE on ESD initiatives should:

- emphasize the centrality of communication, the diverse forms of communication needed for inter-organizational communication and communication within and between communities, and the need for sharing information
- identify reliable and locally relevant sources of knowledge that make use of local and regional expertise
- facilitate and provide incentives for changing behaviors and lifestyles

- promote public education about sustainable development, the values of sustainability, and what sustainable living and livelihoods might look like in our region
- help people connect with community organizations and other grassroots initiatives
- make use of the various forms of media in teaching about sustainability given its impact on much wider audiences
- incorporate public demonstrations into educational practices
- provide tools and strategies for working with resistance
- focus on future generations by connecting expertise with children and youth and developing opportunities for mentorship
- help make available resources for community projects

5. SK RCE Governance Structure

5.1 Governance Structure Overview

The governance structure for the proposed Regional Centre of Expertise on Education for Sustainable Development (RCE) in Saskatchewan should enable it to be innovative, flexible, and decentralized, able to seize upon opportunities, utilize the latest education and communication technologies, be results-orientated down to the “grass-roots” level, and inclusive of all sizes of communities. In addition, the current proposed governance structure assumes the Saskatchewan RCE will operate in its initial phase(s) with limited financial support from any source but instead build upon the voluntary contributions of its individual and organizational members.

The SK RCE should be capable of accommodating a wide range of community-specific educational requirements within its geographic region² and still provide a comprehensive framework to incorporate the many facets of learning about sustainable development.

Before outlining options for a proposed SK RCE governance structure, background on the United Nation's concept of the RCE is presented. The background and objectives of the United Nation's concept of Regional Centres of Expertise on Education for Sustainable Development is best summarized by the following excerpt from the United Nations University Institute of Advanced Studies *Mobilizing for Education for Sustainable Development: Towards a Global Learning Space based on Regional Centres of Expertise*:

In December 2002, the 57th Session of the United Nations General Assembly adopted a resolution to launch the Decade of Education for Sustainable Development (DESD) from January 2005, following the Johannesburg Plan of Implementation. UNESCO became the lead agency for the Decade which, as one of the first steps developed a draft International Implementation Scheme for DESD.

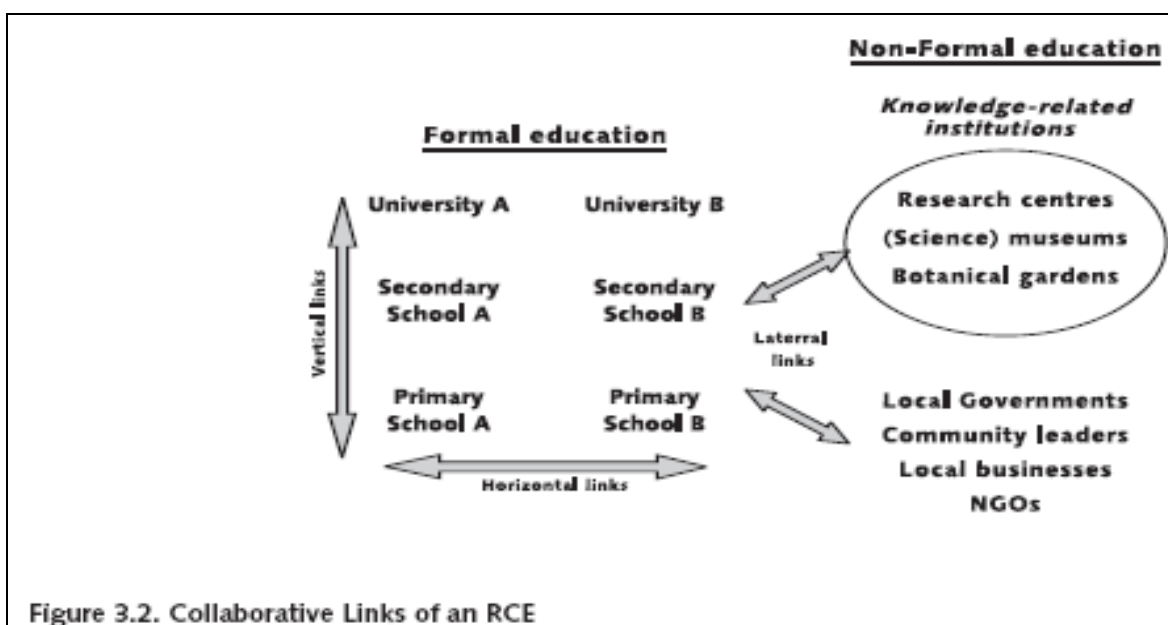
As a response to the challenges of ESD³ and DESD, the United Nations University-Institute of Advanced Studies (UNU-IAS) initiated a new programme on Education for Sustainable Development (EfSD) in 2003. Through our activities in six programme areas, we aspire to facilitate actions leading to the fulfillment of the objectives of DESD. EfSD programme has a two-step approach—first, to provide intellectual and conceptual reflections on challenges of ESD and second, to assist in actual implementation of the ESD initiatives. Our six programme areas are 1) advocacy and awareness raising

2 Note this geographic region is receiving further definition over time. The University of Regina and University of Saskatchewan Departments of Geography may be consulted on helping formalize regional boundaries for the proposed SK-RCE. Criteria for selection of the initial SK-RCE might include ecological management zones, political boundaries (e.g., rural and urban municipalities) and Saskatchewan school board boundaries. In addition, expertise and interest expressed by communities in ESD will also be a factor.

3 ESD is the acronym for "Education for Sustainable Development" as discussed in "Mobilizing for Education for Sustainable Development: Towards a Global Learning Space based on Regional Centres of Expertise".

about ESD, 2) promotion of Regional Centres of Expertise on Education for Sustainable Development (RCEs), 3) development of ESD curricula and learning materials, 4) support of Resource Project of the Global Higher Education for Sustainability Partnership (GHESP), 5) promotion of distance on-line learning through ICT; and 6) training the trainers.⁴

The proposed governance structure in this paper is based on incorporating the objectives set out by the United Nations University's Institute of Advanced Studies for the Regional Centres of Expertise. These objectives can be developed at various scales, including centralized formal institutional locations and at very localized grass-roots levels in smaller communities. The *Regional Centers of Expertise on Education for Sustainable Development Concept Paper* outlines in an abbreviated way the following conceptual framework for the inter-relationships and collaboration between the key-stakeholders.⁵ The governance structure of the SK-RCE is intended to support and promote these inter-relationships (see Figure 3.2 below from *Mobilizing for Education for Sustainable Development*).



As illustrated above, the planned SK-RCE relationships must be capable of accommodating formal and informal education. Formal education ranges from universities and technical institutes (e.g., the University of Saskatchewan, University

4 United Nations University Institute of Advanced Studies, *Mobilizing for Education for Sustainable Development: Towards a Global Learning Space based on Regional Centres of Expertise*. It can be downloaded from the following URL address: <http://www.ias.unu.edu/binaries2/RCEreport.pdf>

5 The full discussion paper can be accessed from the following URL address: <http://www.studentforce.org.uk/PDF/UNU%20RCE%20Revised%20draft%20Concept%20Paper.pdf>

of Regina, and the Saskatchewan Institute of Applied Science and Technology (SIAST)) to selected secondary and primary schools within the SK RCE region. In addition, local governments, school boards, and community leaders from a wide range of smaller urban and rural municipalities, and the larger centres of Saskatoon and Regina need to be integrated into the model. Finally, other organizations such as research centres (e.g., the Centre for Sustainable Communities in Regina), environmental organizations (e.g., the Saskatchewan Environmental Society, Saskatchewan Eco-Network, Nature Saskatchewan), student groups (e.g., the University of Regina Campus Greens, SIAST Wascana Green Group), and community organizations (e.g., the Craik Sustainable Living Project) should have an opportunity to participate fully.

A Proposed Relationship Model for Organizational Governance

The general inter-related concepts associated with sustainable development and models to graphically illustrate these many relationships are frequently presented. One example is featured on the Web site entitled *ConservationEconomy.Net*. A “Conservation Economy”⁶ is presented which includes an integrated model for *social capital*, *economic capital*, and *natural capital*. The framework and inter-relationships are represented below (Figure 1) in the “pattern map” developed at this site.⁷

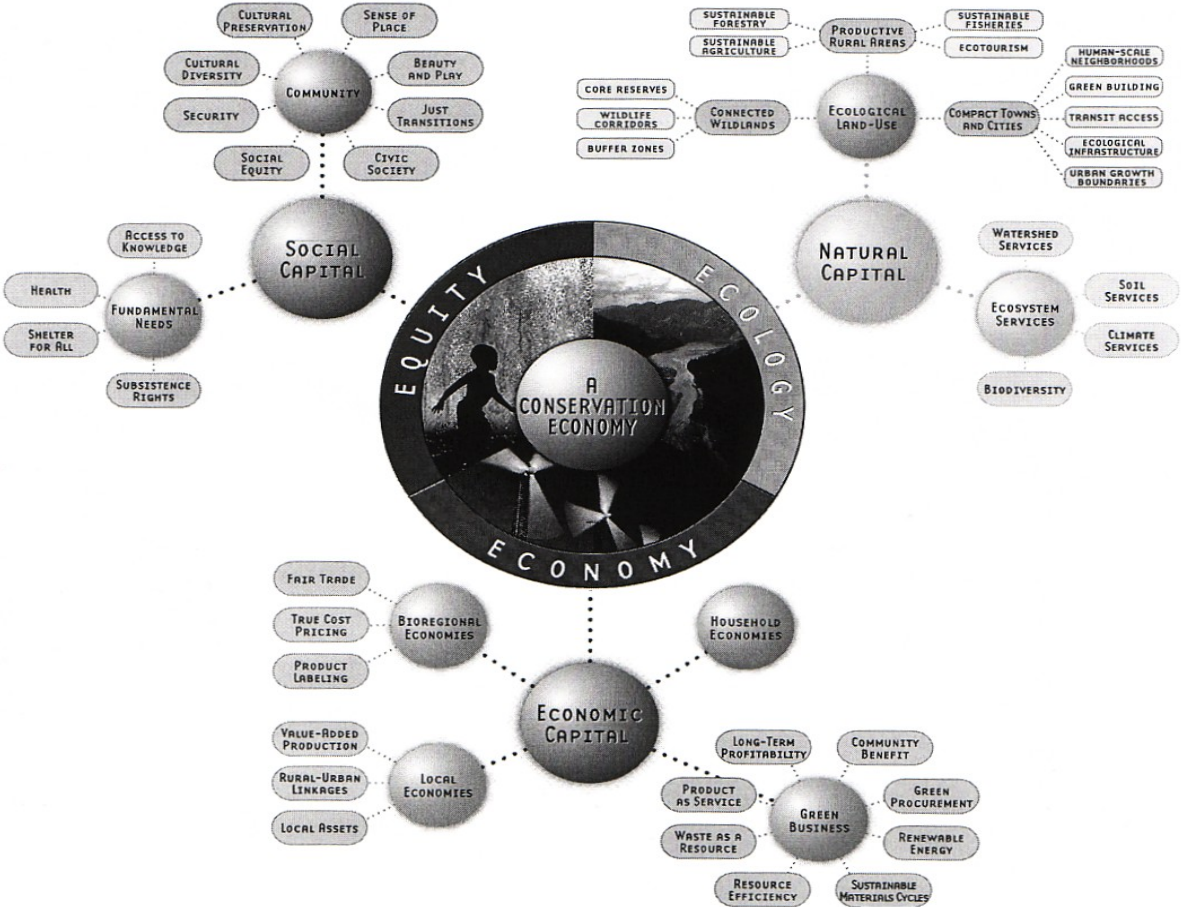
It is proposed that the SK-RCE governance structure will reflect this focus on relationships. The structure would be strategically partitioned to include six main elements, one for each regional issue in ESD that has been identified by RCE participants.⁸ Using the analogy of a tree, the life-sustaining actions within a tree include the upper-most leaves involved in photosynthesis and the lower-most rootlet systems engaged in nutrient collection and transport. The remainder largely functions to provide an architectural framework for coordination. Similarly, in the proposed RCE model, the outer-most circles, analogous to leaves, correspond to specific ESD initiatives engaging learners. Everything else should be designed to support and facilitate actions at this outer region where various kinds of direct education for sustainable development will take place. As such, unlike conventional pyramids of power in centralized organizations, the centralized features of the SK-RCE are intended to facilitate and support specific initiatives in ESD at local and community levels. This central feature in many cases will not be critical to the survival and development of specific RCE initiatives. These local projects and/or issue specific ESD initiatives are intended to become independently viable and self-sufficient so that their ongoing success is not undermined by the loss or dormancy of other initiatives. Coordinating bodies at the regional level, however, are still needed to ensure overall achievement of regional goals.

6 In A Conservation Economy, economic arrangements of all kinds are gradually redesigned so that they restore, rather than deplete, natural capital and social capital. This will create extraordinary opportunities for those who foresee and drive these changes. The fundamental needs of people - and the ecosystem services which sustain them - are the starting point for a different kind of economic prosperity that can endure generation after generation.

7 The URL address for this model is: http://www.conservationeconomy.net/pattern_map/flash/index.htm

8 These would parallel the three main elements of *Social*, *Natural* and *Economic Capital* in the *ConservationEconomy.Net* model.

Figure 1: Example of a Relational Model from ConservationEconomy.Net



5.2 Governance Outcomes of SK RCE Structure

The following is a list of *governance* outcomes identified by participants in formulating the SK RCE that have subsequently been used in designing the proposed SK RCE structure. While designated as *outcomes*, they are outcomes primarily related to the *processes* by which the SK RCE undertakes its activities. Each of these is elaborated upon in *Appendix C*.

- Transparency
- Accountability and Stewardship
- Flexibility
- Facilitation
- Autonomy and Self-determination
- Democracy
- Human Justice
- Leadership
- Participation
- Strategic Planning and Timely Decision Making
- Reflection and Discernment
- Decentralized/Grassroots Decision Making

These governance outcomes focusing on the SK RCE's *processes* are intended to be able to be evaluated using qualitative and quantitative measures.

5.3 Outline of SK RCE Organizational Structures

A coordinating board entitled the *RCE Facilitation Group* would occupy a central role serving as part of the “trunk” or “hub” to facilitate and support actions by those engaged in ESD activity. Additional kinds of administrative and financial support might also be provided by this board at a later date where these become available.

Six coordination working groups entitled *Theme Area Working Groups* are linked to the RCE Facilitation Group, each other, and specific ESD initiatives in their respective issue or theme areas. The six ESD issues or themes identified by the Saskatchewan RCE to date are:

1. Climate Change
2. Health
3. Farming and Local Food Production, Consumption, and Waste Minimization
4. Reconnecting to Natural Prairie Ecosystems
5. Supporting and Bridging Cultures for Sustainable Living and Community Building
6. Sustainable Infrastructure including Water and Energy

Each *Theme Area Working Group* in the following diagram is represented by a circle to indicate its distinct ESD focus. In each case the working groups are expected to integrate concerns for ecological, social, cultural, and economic sustainability in addressing their respective ESD themes. They are also to integrate the two overarching themes of (1) sustaining rural communities and (2) developing educational approaches for regional ESD. Theme Area Working Groups facilitate and help coordinate ESD initiatives within their topic area. They also engage in ongoing ESD research and are to ensure proper cataloging, distribution and storage of materials they generate.

Specific project groups within the six strategic areas would establish and coordinate basic ESD activity, either in the form of (1) specific ESD initiatives or (2) local centres of expertise in ESD (i.e., local learning spaces that are geographically situated and able to provide hands-on, tacit learning experiences). For example, within the SK RCE, a Local Food Directory Project is an ESD initiative aimed at designing a Web-based interface to inform and connect consumers with local food producers in the region. This initiative would fall within the “Farming and Local Food Production, Consumption, and Waste Minimization” ESD theme area. On the other hand, the Eco-Centre of the Craik Sustainable Living Project (geographically situated in the town of Craik, Saskatchewan) would serve as a local centre of expertise in straw bale construction. This local centre of expertise would fall within the ESD theme area of “Sustainable Infrastructure including Water and Energy”. Each project group would do research and generate material on sustainable development education based on direct in-the-field demands for educational material. Integration and sharing with educational institutions would ensure that ESD research material is developed by educational institutions at all levels of education, whether elementary, secondary, or post-secondary education. University and technical institute research would be driven by scholars and be peer-reviewed.

In addition to these proposed SK RCE governance structures is the *functional* need for effective communication and exchange of ideas and information over a wide geographic area. An Internet-based networking system operated and maintained by a distinct entity is recommended. An *RCE Technology Group* at the regional level would be responsible for helping develop and maintain this RCE virtual networking structure. Internet-based technologies such as discussion forums are geographically independent and can be managed by a team of moderators under one system administrator. These moderators can be widely dispersed throughout the SK RCE region and would include key members from all working groups. Both Saskatchewan universities and SIAST have hardware and support staff that could potentially be contributed to establishing a Web-based networking structure supplemented by RCE volunteers. In addition, such a system can take advantage of freely available Open Source Software tools such as Open Source Internet bulletin boards (e.g. phpBB⁹) and Open Source office suite software (e.g., OpenOffice¹⁰). These tools would facilitate RCE's in other countries, especially in developing countries, to access and use educational materials developed in the SK RCE.

In *Appendix D* criteria for membership in each regional structural group is identified along with specific responsibilities to be held by each. In addition, all the RCE governance structures are to be designed in a way that reflects key sets of values identified by RCE participants. These values are:

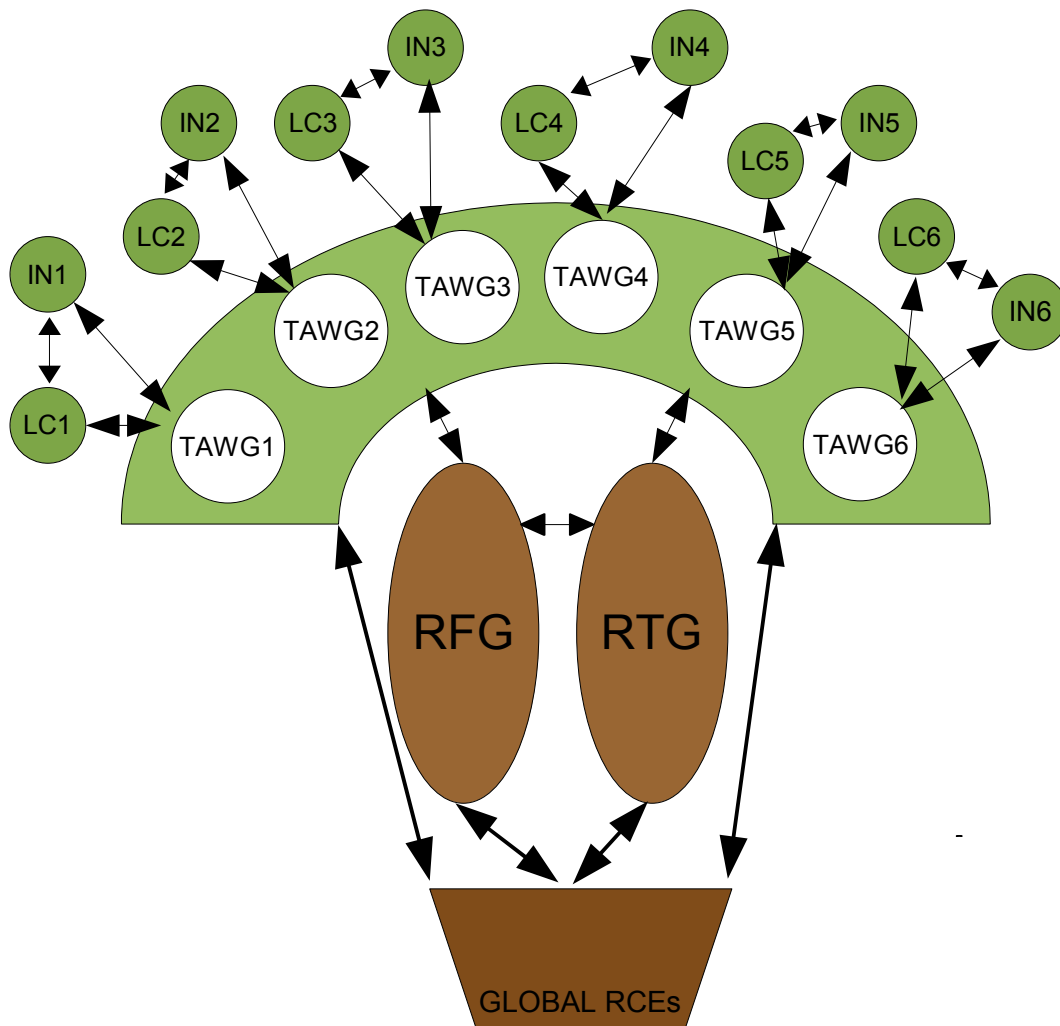
1. efficient use and stewardship of resources;
2. respecting local autonomy;
3. building human and organizational capacities;
4. building regional capacity for ESD; and
5. building capacity for regional knowledge and resource sharing.

9 *phpBB* software enables the user to easily develop a custom-designed discussion forum and information repository. Membership, submissions and discussions are "moderated" to maintain quality and quantity of submissions. Non-member access is restricted to read-only and down-load. Formal application and passwords are used for formal members to access, research and publish information to the discussion forum. Hundreds of thousands of documents can be handled in this way. *phpBB* software is a free, high powered, fully scalable, and customizable Open Source bulletin board package based on the powerful PHP server language and your choice of MySQL, Postgres, or Access/ODBC database servers. The project has been stable since its creation in June 2000 without changes in licensing, leadership or corporate associations. Dwight Mercer is currently a moderator on an international phpBB bulletin board and can attest to its ease of operation and facilitation of information exchange [text messages, file attachments, image and video clips and 'key-word' search capabilities of historic postings] [<http://www.phpbb.com/>]

10 *Open Office - Open Source Office Suite Software*: OpenOffice.org is an open-source project, home of OpenOffice software, the most widely distributed open-source multi-platform productivity suite. The OpenOffice.org community was founded by Sun Microsystems in 2000. An active community, of which Sun is a key member, enhances and supports the OpenOffice.org office suite. The OpenOffice.org application runs on most major operating system platforms including Windows, Linux, and the Solaris Operating System. More than 60 localizations are in different stages of development. Some platforms and languages, such as Mac OS X, might not yet be available in the most current version. The word processing, spreadsheet, presentation and database modules emulate the Microsoft Office Suite and are available for free by downloading from OpenOffice.org. Open-source licensing makes it very attractive for non-profit groups in Canada. Internet Source: <http://www.sun.com/software/star/openoffice/>

These values are subsequently elaborated upon in *Appendix E*. A diagrammatic representation of the SK RCE on ESD is also provided on the following page. The diagram (Figure 2) uses circles to represent the autonomous functions of the structural communities of the RCE and arrows to show formal relationships between these groups. The symbol of a tree illustrates the supportive and facilitative role of the regional structures in enabling the local ESD structures of the RCE to flourish.

Figure 2: SK Regional Centre of Expertise on Education for Sustainable Development Governance Structure Diagram



Legend:

Local Structures:

IN = Initiatives in ESD within each of the 6 ESD Theme Areas

LC = Local centres of expertise within each of the 6 ESD Theme Areas

Regional RCE Structures:

The following provide support and resources for local structures:

TAWG = Theme Area Working Groups, one for each of the 6 ESD Theme Areas identified by the RCE

RFG = RCE Facilitation Group

RTG = RCE Technology Group

Global Structures:

The SK RCE regional structures formally network with other Global RCEs through the United Nations University RCE initiative.

6. Regional Financial Resources for the SK RCE

The following financial funding has been received to date towards establishing the proposed regional structures of the SK RCE. This does not include the funding currently in place for existing and possible ESD initiatives at the local level outlined in Section 8.

(1) Technology Innovation Fund, University of Regina, \$1600

The University of Regina through its *Technology Innovation Fund* has approved \$1600 towards computer hardware to help establish the Web based regional networking structure for the SK RCE. This financial award was based on a successful application to this competitive fund of the University of Regina. Applicants for this proposal were from a cross-section of university disciplines including the Faculty of Education, the Department of Chemistry and Biochemistry, the Department of Computer Science, the Faculty of Engineering, and the Department of Philosophy and Classics. In kind contributions from University of Regina and Luther College faculty have also been made to the project.

(2) Luther College, University of Regina, and Government of Saskatchewan, \$4666

Luther College, one of three federated colleges of the University of Regina, has committed \$4666 to hire a doctoral student in computer science to help design a regional Web based networking structure for the proposed SK RCE. This amount includes substantial funding from the Government of Saskatchewan's Student Employment Experience program. The doctoral student will be engaged in defining the project requirements, system architecture, and possible software applications to be used; engaging in consultation with SK RCE members regarding their networking needs and priorities; and developing a prototype of the Web based networking structure for the SK RCE.

7. Existing and Potential ESD Initiatives in the ESD Theme Areas

The following outlines some existing and possible ESD initiatives in the theme areas that have been identified. The list is not exhaustive and is only meant to illustrate some of the region's potential.

Issue: Climate Change

Existing Initiatives:

- City of Regina's *Green Ribbon Community Climate Change Advisory Committee*
- Research and educational activities of the Prairie Adaptation Research Collaborative (PARC) at the University of Regina
- Climate Change Saskatchewan's educational initiatives
- Saskatchewan Research Council's Office of Energy Conservation
- Craik Sustainable Living Project - climate change curriculum pilot in elementary and middle grades

Possible New Initiatives:

- Further education on climate change
- Sustainable transportation such as cycling, walking and public transit
- Emission reduction and promotion of alternative transportation technologies (e.g., solar and electric cars, reduction of cars on university campuses)
- Creating a space where local stories of climate change and its impacts can be shared (e.g., impacts on local livelihoods (e.g., farmers, hunters, gardeners), health impacts, impacts of extreme weather events)

Issue: Health

Existing Initiatives:

- The University of Regina has a rich culture of health-related and environmental research – current researchers are aiming to further establish the link between environmental causes and health effects by linking the findings from both areas of research
- Researchers from the First Nation's University of Canada, in conjunction with those from the University of Regina are pursuing programs to learn from rich Aboriginal health knowledge, the fusion of Western with traditional medicine, and establishing a deep respect for traditional health and medicine
- The Craik Doctor's Office is currently engaged in the Saskatchewan Chronic Disease Management Collaborative, a provincial primary health care initiative. As part of this Collaborative, the Craik community is specifically working in the area of diabetes and chronic artery disease management.

Possible New Initiatives:

- Preventative medicine focusing on healthy living and combating illness (“dis”

“ease”) through education in relation to anti obesity, inactivity and unhealthy food consumption. Guidance from Saskatchewan's Aboriginal community will enhance these efforts

- School programs to improve nutrition, exercise, and awareness of the effect pollutants can have on health.
- Furthering our understanding of links between disease and poor environmental conditions (e.g., asthma and cancer as these relate to environmental pollution/contamination)
- Gathering knowledge about medicinal plants native to Saskatchewan and their healing properties and addressing issues of appropriate forms of valuation

Issue: Farming and Local Food Production, Consumption, and Waste Minimization

Existing Initiatives:

- Fair Deal Foods focusing on food traceability
- FarmerDirect focusing on transparent farmer-consumer transactions, organic farming, free range cattle, and developing hemp-based products (paints, building bales etc.) aimed at holistic plant use
- The Local Food Directory Project is an initiative led by the University of Regina in conjunction with the Child Hunger and Education Program in Saskatoon, Farmer Direct Co-op, Population and Public Health Services of the Regina Qu'Appelle Health Region, Saskatchewan Organic Directorate, Saskatchewan Organic Livestock, and the Saskatchewan Vegetable Growers Association. It is aimed at creating a directory that will help link producers and consumers and develop local markets for local products. It is intended to help develop value-added industries in the province and provide consumers with the tools needed to compare local products with national brands as well as providing information about emissions and other social, economic, and environmental impacts.

Issue: Reconnecting to Natural Prairie Ecosystems

Existing Initiatives:

- Education through eco-tourism (e.g., *Pelican Tours* in Craik, SK)
- The native plant garden at the Craik Sustainable Living Project Eco-Centre in Craik, SK.

Possible New Initiatives:

- Using the environment /nature as a classroom for hands-on activities and wilderness experiences
- Learning about sustainability values tied to ecosystems
- Increasing knowledge about Saskatchewan's natural history
- Restoration of native ecosystems in urban areas

Issue: Supporting and Bridging Cultures for Sustainable Living and Community Building

Existing Initiatives:

- The Good Ideas Group
- Regina's Mosaic Festival celebrating the variety of cultural communities in the City.

Possible New Initiatives:

- Further bridging of First Nation and non First Nation communities in formal education settings on topics of sustainability
- Encouraging multiculturalism by linking student artists with other students of different cultures and heritage

Issue: Sustainable Infrastructure including Water and Energy

Existing Initiatives:

- Eco-centre of the Craik Sustainable Living Project (CSLP) in Craik, SK
- Campus Sustainability Initiatives at the University of Saskatchewan, University of Regina, and Saskatchewan Institute of Applied Science and Technology (SIASST)
- National Research Council Canada's Centre for Sustainable Infrastructure Research (CSIR) located in the University of Regina Research Park
- City of Regina *Infraguide* focusing on best practices for municipal infrastructure

Possible New Initiatives:

- Urban revitalization projects through building sustainable housing in urban centers with sweat equity of new owners and contributions of local housing NGO's, and volunteers.

ESD Initiatives Cutting Across Theme Areas

Existing Initiatives

- The Saskatchewan Education for Sustainable Development Working Group (SESDWG) is a broad based initiative with leadership from the Department of Learning of the Government of Saskatchewan (Saskatchewan Learning). It has received \$65,000 this year of funding towards specific ESD projects in Saskatchewan. \$50,000 of this was received from the Canadian International Development Agency (CIDA) and \$15,000 through a partnership between Environment Canada, the Province of Manitoba, and Learning for a Sustainable Future (LSF). SESDWG has made a number of formal ESD commitments including
 - mapping ESD activities in Saskatchewan

- providing seed money for youth sustainability forums in Saskatchewan
- holding an ESD symposium in the fall of 2006.

8. Transformative Expectations and ESD Outcomes of the SK RCE

In framing its structure, strategic directions, activities, and initiatives the SK RCE on ESD will seek to achieve the following outcomes over the longterm.

Literacy and access to quality basic education for all within the region. Literacy rates and quality of basic education is monitored. Initiatives that promote literacy and quality education are active within the region. Root causes impacting literacy rates in the region are researched and regionally appropriate responses are developed.

Identification of key issues of sustainability and sustainability projects in the region. There is an ongoing capacity assessment of challenges and strengths in sustainability in the region and identification of ESD projects. These are regularly documented for research, communication, and networking purposes. This identification of sustainability issues is central to facilitating problem-based research and practical case studies for ESD. Identification of sustainability projects provides opportunities to learn about sustainability in real life situations through access to practical, on-the-ground, hands-on projects (vs. just information). It enables communities in the region to be living laboratories for sustainable development that encourage learning by example. Documentation of projects avoids repetition of errors and unproductive forms of duplication.

Open networks for knowledge sharing. These networks facilitate knowledge sharing between individuals and organizations within the region engaged in ESD and between the RCE and other individuals and networks at a global level. These networks include a broad diversity of organizations (see above) and facilitate sharing of both codified research and information (explicit knowledge) and know-how (tacit knowledge). Educational resources are actively shared to avoid needless duplication and inefficient use of resources. Public speakers and other academic and public forums on ESD are facilitated in the region.

Public awareness about sustainability in the region. An informed citizenry is aware of the values and meanings of sustainability and current sustainability initiatives in the region. The public is aware of opportunities for further action, challenges to regional sustainability, and the impact of various forms of consumption (for example, the full life cycle costs of products and infrastructure) and other livelihood choices on sustainability outcomes. The goals of the *Decade of Education for Sustainable Development (2005-2014)* are popularly understood as are other major international initiatives in sustainability.

Ongoing opportunities for collaborative work on ESD projects. Hubs of networking are established that provide opportunities for networking between people and organizations engaged in similar ESD work or those wanting to co-operate on larger ESD projects (either within the region or internationally with other RCEs). These networks bring groups together to leverage activities, share expertise, and allocate resources efficiently. They also share contact information and areas of expertise of individuals and

organizations to allow direct, non-mediated ESD developments.

Integration of sustainability into formal education curricula. Sustainability is integrated holistically into the curricula of elementary, secondary, and post-secondary educational institutions. It includes an exploration of the underlying values and principles of sustainability and knowledge of ecological systems. Curricula explore a variety of scales of decision making including those at the personal, organizational, and community level. Curricular materials are adapted to reflect and take advantage of local realities and to be culturally appropriate. Curricula are regularly revised and updated to take advantage of educational advances in sustainability, regional changes, and emerging opportunities. Curricula include developing awareness of what is required for sustainable living and sustainable livelihoods in the region. Sustainable livelihoods are promoted and training provided where appropriate. Curricula are adapted to ensure there are no educational gaps in ESD so that benefits of ESD are not lost as one moves through educational institutions and to facilitate all-life learning. ESD is incorporated into curricula for those training in education and education related professions.

Formal linkages promoting ESD between organizations. Organizations are linked with formal agreements that promote sharing resources and advancing strategies for ESD. These are based on acknowledging the respective strengths and specializations of each. Agreements are made that specifically include formal educational institutions (such as agreements between higher education institutions in the region).

Identification of current research in ESD and coordination of new ESD research projects. ESD research by various organizations in the region is identified and made available as are other sources of ESD research. Opportunities for collaborative research projects in ESD are identified. These include research work on operational methods for educating different sectors of society about sustainability, monitoring educational results, and assessing success regarding educational outcomes. Education models are developed and revised through continuous feedback based on an initial development of educational models, the establishment of principles from these models, the application of these to case studies, followed by assessment and further model revision. Best practices in ESD among alternative educational models are identified. Collaborative research applications within the region to funding sources are encouraged, identified, and coordinated where not taken up by others. Larger research goals around ESD that could unite researchers across post-secondary education institutions (including universities, colleges, and technical institutes) and other research organizations are developed. These specifically encourage interdisciplinary projects and cross-organizational activities in ESD within the region and with other RCEs.

Development and incorporation of science and technology for ESD. Open access educational technologies are developed to achieve the goals of ESD and to facilitate networks of knowledge sharing. These are developed on platforms that promote interoperability with other RCEs. These technologies should be customizable to regional circumstances, readily facilitate collaboration by allowing regional and global contributions, and allow public accessibility (for example, through open source software

and other open licensed technologies). Virtual regional networks are developed, where appropriate, in achieving the outcomes set for the RCE (such as listservers and other Internet technologies).

Acknowledgment and celebration of success. Successful ESD initiatives are broadly publicized in the region in ways that facilitate further research and networking. Reward systems are developed in academia and within other professions and organizations that encourage (vs. penalize) individuals to step out of their particular profession, trade, or discipline to engage in collaborative ESD initiatives. ESD opportunities for employees and decision makers in various types of organization are actively promoted.

Ongoing advocacy for ESD outcomes. Organizations in the region are actively encouraged (for example, through advocacy, advisory groups, or networked lobbying) to pursue ESD strategies within their organizations. Regional activities that undermine or impede ESD initiatives and outcomes are publicly and privately questioned and discouraged. Vehicles for providing the regular public expression of educated opinions about ESD are established.

Ongoing documentation of RCE activities. This documentation is essential for researching RCE activities. It is also essential in sharing the successes and failures of the RCE globally with other RCEs. It provides a basis for evaluation of RCE activities and reflection in guiding future RCE activities. Documentation of RCE activities provides a basis for transparency with RCE members, regular communication about RCE activities to organizations engaged in ESD and to the broader public.

Ongoing measurement and evaluation of RCE initiatives. The RCE measures the success of its activities through, among other things, developing qualitative and quantitative outcome measures of its activities and projects. The RCE uses current evaluation techniques to benchmark and improve its work in achieving regional ESD objectives.

These longterm outcomes are intended to be able to be evaluated using qualitative and quantitative measures.

Appendix A: Individuals and Organizations Supporting the SK RCE Proposal

The following individuals and organizations are supporting the SK RCE proposal. These are organized by community (the town of Craik and the cities of Regina and Saskatoon). Letters of Support from some of these can be found in *Appendix F*.

Craik, Saskatchewan

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Regina, Saskatchewan

City of Regina

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Appendix B: Current Regional ESD Activities of Major Stakeholders

The following provides a sample of some of the activities of organizations engaged in Education for Sustainable Development within the proposed region of the SK RCE.

University of Regina

The University is located within the Wascana Centre, a 930 hectare development dedicated to education, recreation, culture, the seat of government, and the Saskatchewan environment. There are nine faculties and 23 departments, with programs leading to bachelor, masters, and doctoral degrees. Teaching and research opportunities are facilitated through 12 research units on campus. Below is a short description of departments, which actively support research on sustainability issues.¹¹ Specific organizations and initiatives supporting Education for Sustainable Development at the University of Regina include:

- **Sustainable Campus Advisory Group (SCAG)**
SCAG was established in 2002 as a result of ideas from the Campus Sustainability Conference in Waterloo earlier that fall. This group is run by University of Regina faculty members, staff and students, and its objective is to inform the university community about sustainability issues and to facilitate the process of making the University of Regina a leading example of a sustainable university in Canada. The group has invited guest speakers from other universities that are leaders in campus sustainability and has drafted a sustainability policy for the University of Regina currently under review by the administration.

- **Sustainability related research and education**
 - Faculty of Education. Learning through school projects with sustainability themes. Youth Forums on sustainability in collaboration with the Royal Saskatchewan Museum.
 - Faculty of Engineering. Solid waste and water management, energy efficiency
 - Department of Biology. Climate change, and grassland conservation and restoration.
 - Department of Chemistry. Trace analysis facility to detect pesticides in air, ground water, and sediment cores.
 - Department of Geography. Climate change, urban planning and sustainable resources
 - Luther College, a federated college of the University of Regina. Reflection on values of sustainability.
 - Department of Sociology. Social Justice Research
 - Sustainability research in other areas including the Faculty of Fine Arts, the School of Journalism, and the Department of Media Production and Studies

¹¹ For further information please see: <http://uregina.ca/~piwowarj/SustainableCampus/campusindex.htm>
This includes a summary of initiatives found in Fix, J. 2004. *On the Way to Sustaining a Sustainable Campus: a compilation of Sustainability Initiatives at the University of Regina*. Regina: University of Regina Department of Geography.

- **University of Regina Infrastructure**
 - **The University of Regina Physical Plant**

Energy Use

Energy conservation and efficiency improvements have been standard practice at the U of R Physical Plant for decades. As an example, during a recent 3 year period when our campus grew by 36%, our energy usage grew by less than 5%. This success is a combination of efficient new buildings such as the Centre for Kinesiology, Health and Sport (CKHS) that is 37% more efficient than the Model National Energy Code, and improvements to existing buildings that have reduced energy usage by more than 20%.

The Physical Plant has recently completed an energy audit that has identified numerous measures that will further improve this great story. The efficiency measures described in the audit will cost \$5.5 million and will result in \$850,000 in annual utility savings, a 16% improvement for the entire campus. The implementation of these measures will take place over the next five years.

The Physical Plant constantly conducts energy management audits and monitors energy use by collecting data. This enables them to increase the efficiency in energy use of buildings and equipment.

Tree Relocation and Landscaping Program

During construction on campus in 2001, the Physical Plant successfully relocated almost 500 Scotch Pine, Colorado Spruce, American Elm, Green Ash and other species, some as large as 13 meters. The \$350,000 relocation project saved the U of R \$650,000 due to the estimated \$1 million value of the trees.

In early 2001, the University of Regina began design of a 700-bed Student Residence and a new Centre for Kinesiology, Health and Sport. The tree relocation program sprang out of stakeholder driven decisions to site these new buildings in the most mature and heavily treed area of the campus. The situation was volatile; trees in Saskatchewan are treasured. (Trees in Regina and most trees in Southern Saskatchewan have been hand planted). At the University of Regina this sentiment is even stronger due to its location in Wascana Centre, the largest urban park in North America. Armed with responsible landscaping strategies but saddled with the strong possibility of negative publicity and significant internal community dissatisfaction, the University initiated the building projects and necessary tree relocation and landscaping program.

During a period of 34 days in the fall of 2002, the University successfully relocated almost 500 Scotch Pine, Colorado Spruce, American Elm, Green Ash and other species, some as large as 13 metres (40 feet) with one of the largest tree spades in North America. The trees gave instant life to newer, under-landscaped

areas of the campus. The key to the projects success was the strong planning and the very open and proactive communications strategy. Newspaper and television coverage was extremely positive. What could have been a very negative event was heralded as a most successful improvement to the larger campus environment without the loss of a highly valued resource. The most remarkable and uncharacteristic outcome is the lack of complaint. Experienced university administrators cannot believe that not a single complaint has been uttered about what would be a most controversial project at any University campus, let alone in treeless Saskatchewan.

Since every one of the trees was relocated to new sites on the main campus, these relocated trees and plantings immeasurably improved the character and vibrancy of otherwise barren areas of the campus. By using existing assets, the University saved hundreds of thousands of dollars in material costs and improved parts of the campus that would have been begging attention for years.

- **University of Regina Student's Union (URSU)**
The Sustainable Campus Implementation Team (SCIT) was put in place by the 2002-2003 URSU, and consisted of student volunteer members from all faculties. They developed the Sustainable Campus Action Plan (SCAP), which is meant to serve as a guide for sustainable development work undertaken by URSU. Some past and current activities include: Working with the City of Regina through committees like the Transit Coalition to make public transportation use by students more feasible, the establishment of a recycling station in Riddell Centre, and a lights-off campaign.
- **Canadian Plains Research Centre**
The Canadian Plains Research Center (CPRC) is a interdisciplinary regional research center, whose mandate is to initiate, undertake, encourage and support research and scholarly work on all aspects of prairie life, including its history, resources, land and people. Research may be on any topic, from political trends to the economics of prairie agriculture, from prairie literature to Indian folklore - as long as the Canadian Plains are the focus of the work.
- **Centre for Sustainable Communities**
The University of Regina's Centre for Sustainable Communities (CSC) facilitates partnerships between university faculty, staff and research communities, seeking to link social policy with environmental infrastructure to create sustainable cities and healthy communities.

The CSC is an important component of the University of Regina's collaboration with the Communities of Tomorrow Partnership and the National Research Council (NRC).

An additional component of CSC is the ongoing development of a sustainable

campus, which actively supports campus sustainability research and projects. Engaging faculty, staff and students in the growth of sustainable action at the University of Regina, strengthens our opportunity to become a model of socio-economic progress, and environmental excellence. CSC is currently supporting 10 research projects.

- **The University of Regina Parking Services**

The University of Regina Parking Services works towards "Greening" the University of Regina through a variety of projects and campaigns. These include:

- Technology that reduce energy consumption through the electrical units to which vehicles derive power for engine block heaters during the winter months.
- Regina's Carpool Partners (University of Regina, City of Regina, SaskTel, Farm Credit Canada and Regina Research Park) and Commuter Connections offer a free service to those wishing to explore carpooling options through www.carpool.ca and periodic carpooling rate specials at our Visitor Pay lot and the Riddell Centre Parkade.
- Active solicitation of ideas for improving and promoting bike access, pedestrian walkways, and use of the City transit system.
- Development of ideas to promote carpooling within the University Community.
- Evaluation of different options for the use of salt and sand in the winter months.

Prairie Adaptation Research Collaborative

The Prairie Adaptation Research Collaborative (PARC) is a partnership of the governments of Canada, Alberta, Saskatchewan and Manitoba, with the mandate to pursue climate change impacts and adaptation research in the Prairie Provinces. Their objective is to generate practical options to adapt to current and future climate change. PARC also educate new professionals in the emerging science of climate change impacts and adaptation.

Communities of Tomorrow

Communities of Tomorrow is a sustainability partnership between a variety of stakeholders including the municipal, provincial, and federal governments. It includes the University of Regina, the City of Regina, and the National Research Council, aiming to focus on collective efforts of the CT partners, innovative firms, and other stakeholders on building a cluster focused on sustainable infrastructure. The center represents a \$30-million dollar investment is physically located at the Research Park, and values commercialization as a key spin-off to the research and development undertaken by its research partners (U of R and the NRC).

The establishment of the Centre for Sustainable Communities was part of the U of R commitment to the aforementioned partnership, and the U of R has subsequently developed sustainable research, projects and related activities.

City of Regina

- *Mayor's Task Force on Regina's Future*
Shaping Regina is a long-term community development project launched by the Mayor's Task Force on Regina's Future. Through this project, the Regina community is engaged in an initiative that will result in a 100-year community sustainability plan that recognizes the interconnections between the four dimensions of sustainability: economic, environmental, social and cultural. The choices we make as a community must contribute to a high quality of life - providing opportunity and options for all citizens. In making these choices, citizens and organizations who make decisions within our community must consider the importance of enhancing and protecting the environment, promoting cultural awareness and vibrancy, promoting social cohesion and inclusion, and strengthening economic prosperity and participation.
- Regina City Council's *Vision of Sustainability*
- Formal inclusion of the concept of sustainable development in the City of Regina *Development Plan*
- The City of Regina's Green Ribbon Community Climate Change Advisory Committee. Climate change initiatives (e.g. the City of Regina's Green Book)
- City of Regina's Urban Environment Advisory Council (RUEAC) and its *Vision of Sustainability* (including ecological sustainability)
- Federation of Canadian Municipalities (FCM). National response to the Kyoto Protocol
- The City of Regina's involvement and support of *Infraguide* which is aimed at developing best practices for municipal infrastructure

Saskatchewan Environment

Lead department in developing the Government of Saskatchewan's *Green Strategy* aimed at making "A Green and Prosperous Economy" an overarching goal of the provincial government.

Saskatchewan Learning

SK Learning is a department of the Government of Saskatchewan with responsibilities that include K-12 Education; Early Childhood Development; Student Support Programs; Training Programs; Post-Secondary Education; Provincial Library; Teachers' Pensions and Benefits.

- SK Learning has been instrumental in establishing the Saskatchewan Education for Sustainable Development Working Group (SESDWG) with a broad range of stakeholders interested in advancing Education for Sustainable Development in Saskatchewan.
- SK Learning has incorporated sustainability into a number of its curricula in the sciences and social sciences.
- The departmental interest and activity in ESD compliments the Government of Saskatchewan's *Green Strategy*.

Royal Saskatchewan Museum

- Youth Forums where students are brought together with experts to take on action projects on sustainability issues in Regina
- Natural history gallery including a portion on sustainability examining the human impact on the environment entitled “The Human Factor”.

Craik Sustainable Living Project

The Craik Sustainable Living Project Inc. (CSLP) is a non-profit organization, which aims to advance the local use of more ecologically sound technologies and ways of living. The community of Craik is located halfway between Regina and Saskatoon and makes a natural meeting place for education and networking. The CSLP strives to serve as a model inspiring and enabling positive change in other communities in western Canada and elsewhere. A wide range of sustainable alternatives – such as those related to land use, food and fibre production, shelter, energy generation and conservation, water and waste management, and recycling – will be featured in the four main activities of this project: Eco-centre, Outreach and Education, Community Action, and Ecovillage.

Businesses and consulting firms

***L*A*M*B* Environmental & Educational Consulting**

*L*A*M*B* Environmental & Educational Consulting is a Regina based consulting office that does contract work for the civic, provincial, and Federal governments. The major focus of the consulting work is on the role and importance of education in the formal, non-formal, and informal sectors. Most of the recent work has involved developing educational programs for Climate Change and Sustainable Development.

Non-profit organizations that seek to increase citizens’ awareness on sustainability issues

Regina EcoLiving Inc.

- Regina EcoLiving Inc. is a non-profit Regina based environment organization whose objectives are to guide people to make environmentally friendly choices in their everyday lives, to educate people about environmental issues (local and global), to teach skills that facilitate sustainable living and to introduce ideas, products, organizations and businesses that are sustainable. Regina EcoLiving hold regular workshops and published *EcoLiving: Your Guide to Sustainable Living*.

Other Organizations:

- Climate Change Saskatchewan
- The Sierra Club – south Saskatchewan group
- Fair Deal Foods
- Forces of Nature Eco-Project

- Saskatchewan Environmental Society
- Saskatchewan Eco-Network
- RoadMap 2020

Appendix C: Governance Outcomes of SK RCE Structure

The following is a list of governance outcomes identified by participants in formulating the SK RCE that have subsequently been used in designing the proposed SK RCE structure.

Transparency: The decision making processes, activities, and resources of the RCE structure are fully transparent to those participating in the RCE as well as the public at large. Resources of the RCE available for ESD initiatives are publicly made known in ways that maximize participation.

Accountability and Stewardship: The structure shows wise stewardship of any human, financial, and in-kind resources made available to it in achieving the outcomes set out for the RCE. Responsibilities for decision making where not vested with those engaged in specific autonomously directed ESD initiatives are clearly identified. Authority is designated within the structure in ways that allow for evaluation. Time and resources are focused primarily on ESD activities minimizing what is spent administering the structure.

Flexibility: The RCE is able to flexibly incorporate new initiatives in Education for Sustainable Development that are being developed in the region and, where appropriate, incorporate these into broader regional ESD themes and strategies. The RCE is also designed to be able to flexibly incorporate changes in its structure advanced by its members to better achieve its ESD outcomes.

Facilitation: The RCE primarily acts to facilitate activities initiated at a grassroots level and facilitates cooperation through the region where potential synergies have been identified.

Autonomy and Self-determination: Specific ESD initiatives collaboratively engaged in by individuals and organizations within the region are self-directed. Participants themselves define the issues to be worked on, the pace of the activity, the ESD outcomes to be addressed, and the objectives to be achieved (i.e. what constitutes success). Resources (provided either by the RCE or other outside groups) are made available when requested or invited by participants in specific initiatives with full upfront transparency on any conditions of their use. The RCE structure is also autonomous with those delegated to exercise authority doing so to best advance the ESD outcomes collectively determined by ESD members (as opposed to other non-ESD interests).

Democracy: Decision making within formally established bodies of the RCE structure occurs democratically following established rules of order.

Human Justice: The structure is inclusive specifically of minority and other equity groups. It acts in ways that promote social justice and empower all participants.

Leadership: The structure is designed to nurture leadership among all RCE participants and to be able to make full use of the leadership skills of those interested in participating

in decision making structures of the RCE.

Participation: The RCE is designed to be inclusive, working to recognize the full diversity of interests and talents of our communities and identify and reduce barriers to participation.

Strategic Planning and Timely Decision Making: The RCE is able to act in a timely way in coordinating resources entrusted to its decision making structures in achieving collectively determined outcomes (e.g., taking advantage of opportunities for public awareness, ESD advocacy, and celebration of achievements). The RCE structure periodically engages in planning at various geographic scales to facilitate advancing ESD initiatives to address issues identified across the region as a whole and at various subregions.

Reflection and Discernment: Member individuals and organizations of the RCE and those holding specific roles are tasked to periodically reflect on the structure of the RCE itself and have the capacity to make ongoing improvements in the structure.

Decentralized/Grassroots Decision Making: Decision making authority is only vested within formal structures of the RCE where this is deemed to be required by RCE members to achieve specific outcomes. Within the formal structures of the RCE, the principle of subsidiarity is followed, namely that authority to handle issues is given to the most local authority capable or competent to make the decision and only delegated to a more central authority where this is deemed necessary.

Appendix D: Detailed Outline of SK RCE Governance Structure

At a geographic scale, the RCE is structured to advance education for sustainable development within the corridor between Regina and Saskatoon, Saskatchewan, Canada, encompassing a variety of rural areas, smaller and medium sized towns and cities. This regional boundary is understood initially to be ill-defined and porous as communities become aware of the RCE initiative, make known their own interest in education for sustainable development, and identify the kinds of ESD projects appropriate to their communities within the RCE theme areas.

The RCE will make use of both (1) local physical structures to advance education for sustainable development within thematic areas of the RCE and (2) virtual, technology mediated structures. Both local physical structures and project based virtual structures will be maintained by individual and organizational RCE members. Virtual structures at a regional level assisting the RCE's regional structures will primarily be maintained by these structures (yet potentially hosted by other organizations). Most RCE initiatives are expected to be under the control and auspices of specific RCE members (whether individuals or organizations) and targeted at specific topics and/or sub-regional levels. With resources managed at a local level, regional structures are enabled to operate with a minimal amount of physical, financial, and human resources. This, in turn, enables regional management primarily by volunteers along with greater organizational sustainability. This further enables the RCE to initially operate without formal legal incorporation. The RCE may be legally incorporated, if needed, at a later date once the functions of the regional RCE structure have greater definition and practical reasons for incorporation can be provided relative to the RCE achieving its objectives. RCE regional structures are meant primarily to serve local structures by: (1) identifying local and external resources (whether human, financial, or physical), (2) building capacities, and (3) celebrating successes. Ideally the success of the RCE will be measured by its capacity to enable its RCE members and their ESD projects to flourish.

Local Structures

(A) Local Centres of Expertise

These local centres of expertise will seek to offer hands-on, person to person, educational experiences for sustainable development. This could include formal education and training as well as creating spaces for practical experimentation by individuals and organizations in sustainable lifestyles and technologies. They will seek to be open to the broader public and intentionally inclusive of diverse backgrounds (whether age, gender, ethnic origin, educational level, occupation, etc). In particular they will focus on sharing tacit knowledge (or know-how) within local communities around sustainability. In addition, they will connect individuals and organizations with those with expertise in sustainability at a local level to act as educators, resource people, and facilitators. The

RCE will seek to develop the regional capacity for creating local centres of expertise by identifying existing centres as well as locally available resources that could potentially be used to create such centres. Abandoned or underutilized buildings at the core of downtown Regina and Saskatoon or in smaller cities and towns could be made available for different forms of sustainability education. Resource centres should serve as holistic models of sustainable development reflecting multiple dimensions of sustainability. This would include ecological sustainability (e.g., alternate transportation; alternative and renewable energy (e.g. geothermal heating, solar and wind power); reuse and recycling of materials), economic sustainability (e.g., fair trade, corporate social responsibility, transparent business practices, inclusion of externalities in costing, promotion of diverse forms of sustainable livelihoods), and social sustainability (e.g., accessibility, promoting literacy, encouraging alternative models of organization (e.g. co-operatives), fair labour practices, building community capacity (e.g., regeneration of downtown and poorer community regions), and inclusion of marginalized groups (e.g., disadvantaged children and adults, those experiencing vulnerability). Resource centres should reflect the diversity of organizational forms within society, taking advantage of their respective functional specializations and purposes in advancing a variety of sustainable development initiatives in formal and informal education. These organizational forms could include schools, technical institutes, colleges and universities, households, faith-based organizations, First Nations organizations, professional organizations, governments, businesses, co-operatives, local economic development agencies, and voluntary, non-profit and other community organizations.

(B) ESD Initiatives within RCE Theme Areas

The RCE will help facilitate the formation of local, sub-regional, and regional initiatives in ESD within the ESD Theme Areas identified (including the two cross-cutting themes). These initiatives are to be led and maintained by communities of individuals and/or networks of organizational members of the RCE. This approach ensures local autonomy, including the management and control of resources housed with specific RCE members. The RCE will actively identify and promote these initiatives, both those that already exist as well as new ones that emerge within the region. The RCE will seek to promote synergies between specific initiatives as well as identifying opportunities for new initiatives in response to expressed needs within the region.

(C) RCE Virtual Networking Structure:

The SK-RCE virtual networking structure would enable knowledge sharing and networking among regional ESD participants and between established RCEs. This technology mediated structure will help minimize the ecological footprint of the RCE. While being aimed, in general, at sharing easily codifiable knowledge for sustainability, the outcomes to be achieved by this networking structure would include:

- (1) a capacity for ongoing cataloging, researching, and archiving of Education for Sustainable Development projects in the region;
- (2) postings of new initiatives, developments, seminars, and meetings by educational level and topic;
- (3) sharing of research (such as educational methods) and other ESD documents (such as curricula) developed in the region; and,
- (4) opportunities for informed communication to the public on sustainable development issues of high importance to the region.

User controlled software with commitments to open standards (e.g., such as Open Source Software) would be used to create this interactive virtual space, enabling a high degree of customization, regional and global contributions by volunteers, managing of licensing costs for efficiency, and a capacity for sharing with other RCEs globally. It is envisioned that various forms of collaborative and social software will be used to facilitate this networking. The software could include: (1) wikis for on-going ESD collaborative project documentation and policy initiatives, (2) blogs for individual and group ESD participants, (3) email listservers for announcements to specific educational audiences (e.g., elementary, secondary, post-secondary), (4) group discussion boards on specific ESD theme areas, and (5) a content management system (CMS) to manage the creation, publishing, and archiving of information on the Saskatchewan RCE website. Ongoing sustainability of the virtual structure is expected through adopting easily maintained systems, particularly through volunteers. This shared virtual structure will, at the same time, provide links to existing ESD initiatives and will seek to complement and support rather than duplicate what is already available in the region.¹² RCE members will play a significant role in identifying needs and potential opportunities for this user-driven virtual networking structure. This virtual structure will also seek to enable resource sharing that might facilitate local centres of expertise. For example, the virtual networking structure can act as a repository for ESD documents that might be used in a local setting such as study circle materials on sustainability, curricula and course modules to be used in classroom settings, or technical design materials for hands-on projects such as straw bale housing construction. It could also provide technologies to help facilitate managing resources of local centres of expertise, particularly by volunteers.

Regional Structures

At a regional level, the RCE will be comprised of the following bodies. These will convene as needed and in a manner chosen by each body to accomplish the respective responsibilities set out for each and reflecting their interests. These responsibilities, in turn, are aimed at achieving the RCE's overall ESD outcomes. Each group will strive to uphold the RCE's governance values while conducting their activities. Documentation of

¹² For example, a website has been constructed at the University of Regina (U of R) under the direction of Dr. Joe Piwowar, that serves as a "living" document cataloging activities and achievements at the U of R campus related to sustainable development (<http://uregina.ca/~piwowarj/SustainableCampus/campusindex.htm>). Another example is the use of the SIAST Web site (<http://programs.siastr.sk.ca/mygreensiast>) to promote and document sustainability activities and programs at SIAST campuses.

the activities of each group is essential and will enable research into the contribution of the RCE towards education for sustainable development in the region.

(A) ESD Theme Area Working Groups

One working group will be established for each of the six regional issues in ESD identified by the region. As such there would be a Theme Area Working Group established for each of the following:

- Climate Change
- Health
- Farming and Local Food Production, Consumption, and Waste Minimization
- Reconnecting to Natural Prairie Ecosystems
- Supporting and Bridging Cultures for Sustainable Living and Community Building
- Sustainable Infrastructure including Water and Energy

Composition

- Membership in each Theme Area Working Group is based on an expressed interest by an individual or organizational representative in the theme area, and, potentially having specific expertise or involvement in an initiative in the topic area.
- Theme Area Working Group members will be members of the broader RCE initiative.
- The membership of Theme Area Working Group will seek to include a diversity of individuals and organizations originating from communities of varying size and composition within the region.
- Theme Area Working Groups have the ability to create sub-groups tied to subregional geographic boundaries where this is deemed worthwhile.
- Theme Area Working Groups may also create *ad hoc* subcommittees, where needed, around specific sub-topics or specific initiatives within their theme area or in collaboration with other Theme Area Working Groups.
- Theme Area Working Groups have the power to add new members and are encouraged to invite new members.

Responsibilities

- Identification of existing ESD initiatives and local centres of expertise within the theme area in the region.
- Identification of ESD needs and interests within the theme area expressed by RCE members.
- Facilitation of possible ESD responses to these needs and interests in conjunction with local and regional resources that have been identified.
- Facilitation of creation of new local centres of expertise where there is an expressed local interest and resource capacity

- Facilitating expansion and replication of successful local ESD initiatives across the region using a “train the trainers” model
- Promotion and incorporation of the two regional cross-cutting themes into specific ESD initiatives and ongoing operations. The two cross-cutting theme identified are:
 - sustaining rural communities
 - educational approaches for regional ESD
- Identification, development, and promotion of ESD resources in the theme area in formal educational institutions including teacher and professional training and curriculum development
- Ensuring ongoing documentation of the working group's initiatives and activities and their public availability.
- Promotion and engagement in research related to ESD and the specific theme area.
- Ensuring that celebration and recognition of individual and organizational effort is built into individual ESD projects along with identifying individuals, organizations, and initiatives for regional recognition and celebration.
- Promotion and celebration of local RCE initiatives within the region through a variety of media.
- Providing advocacy on ESD within the theme area and identifying spokespeople within the theme area on specific topics including detailing their expertise.
- Networking with other members of RCEs in other regions working on similar theme areas and initiatives.
- Periodic reviewing of Theme Area Working Group terms of reference, structure, and governance relative to the RCE outcomes and incorporation of recommendations as needed.
- Use, promotion, and contribution of materials to the RCE virtual networking structure where appropriate.

(B) RCE Technology Group

Composition

- Membership in the Technology Group is based on an expressed interest by an individual or organizational representative in identifying, developing, and applying innovative technologies to help support the ESD activities of the RCE.
- Members should have relevant technological expertise where “technology” is broadly understood to include a variety of technological, educational, and communication mediums. Experience with open technologies that use open standards and have open licensing terms is an asset.
- Members of the RCE Technology Group will also be members of the broader RCE initiative.

Responsibilities

The primary role of the RCE Technology Group is to support: the ESD activities of the RCE members, the RCE local centres of expertise, the ESD Theme Area Working Groups, and the RCE Facilitation Group. This support, in part, will be through the RCE Technology Group's development, maintenance, and ongoing improvement of the RCE Virtual Networking Structure including the RCE Web site. Specific responsibilities of the Technology Group include:

- periodic surveying and assessment of ESD technology needs of RCE members
- periodic assessing of the usability of RCE technologies by RCE members
- promoting of the availability of RCE technologies to appropriate audiences and facilitating training opportunities as needed
- maintaining links to organizations involved in the RCE in the region and to other RCE organizations globally
- categorizing and cataloging current RCE initiatives/projects
- maintaining a virtual space for postings of new initiatives, developments, seminars, and meetings for specific educational audiences (e.g., formal: pre-kindergarten, elementary, secondary, and post-secondary, and non-formal: e.g., private media), topic areas, and geographic areas.
- maintaining a space for articulating problems and opportunities for new ESD initiatives and research
- developing and maintaining of a repository or database of codified ESD materials (e.g. RCE documents, ESD documents, curricula, adult education materials (e.g., ESD study circle topics), research papers), including archiving of these materials; created information will be referenced/linked to the respective creator(s)/author(s)
- including appropriate search functions for the RCE Website, repositories, and archives
- identifying and developing technologies to help establish and maintain local centres of expertise in education for sustainable development (e.g., cataloging/lending of physical resources at a local level, listings of local and regional experts with question/answer facilities)

(C) RCE Facilitation Group

Composition

- This committee is comprised of representatives of the following RCE members:
Formal Educational Organizations:
 - Higher education organizations within the region (e.g., technical institutes, colleges, and universities)
 1. Note: there would be minimally one representative of each higher educational institution in the RCE having an interest and expertise in ESD (including some with an interest in ESD research) and the responsibilities of the Facilitation Group
 - Pre-kindergarten, elementary and secondary education (including

- representing a diversity of geographic areas and communities)
- Representatives from the Saskatchewan Department of Learning and local school boards
- Representatives from organizations and agencies mandated to work on the U.N.'s Decade of Education for Sustainable Development:
 1. representation from the Saskatchewan Education for Sustainable Development Working Group (ESDWG)
 2. representation from Environment Canada (e.g., the Public Education and Outreach Directorate)

Community Representation:

- RCE individual and organizational members representing a diversity of:
 1. geographic regions (urban, rural, and varying community sizes; note there needs to be a specific emphasis on ensuring strong rural representation given the SK-RCE ESD theme of sustaining rural communities)
 2. interests in ESD (specifically the various 6 theme areas and 2 cross-cutting themes)
 3. organizational types (e.g., government, non-profit, business, First Nations, faith-based, etc.)
- Overall membership of the RCE Facilitation Group should reflect a balance between formal education and community representation.
- All members of the RCE Facilitation Group will be members of the RCE.

Responsibilities

- determining terms for membership in the RCE consistent with the RCE's outcome and value statements
- maintaining general membership lists (both individual and organizational) for the RCE
- encouraging applications for RCE membership in the region in order to be reflective of a broad diversity of voices and interests in ESD
- encouraging active participation by RCE members to reflect their desired level of commitment and identify and reduce barriers to participation
- facilitating development of terms of reference of RCE regional committees as requested
- identification of individuals who might participate in the RCE Theme Area Working Groups and RCE Technology Group
- identifying and approaching formal and non-formal educational organizations that might potentially be members of the RCE
- facilitating periodic gatherings of RCE members
- helping identify and facilitate joint projects supporting multiple Theme Area Working Groups
- ensuring the cross-cutting themes (i.e., (1) sustaining rural communities and (2) educational approaches for regional ESD) are addressed throughout the structure
- encouraging ESD research pertaining to the region as a whole and identification

- of research opportunities
- identifying potential external resources for ESD that could be used by RCE members, Local Centres of Expertise, Theme Area Working Groups, and the Technology Group (e.g., potential funding sources, in-kind physical and human resources). This includes identifying any terms or conditions for their use and particularly those that are least intrusive to local autonomy
 - helping mediate access to external resources as requested by RCE members and committees
 - acting as the formal liaison with the United Nations University regarding its RCE program
 - assisting other regions in establishing new RCEs by providing mentoring and training as requested or where potential for new RCEs is identified
 - championing the RCE and regional ESD issues in a variety of media and acting as a general spokesperson for the RCE initiative
 - periodically celebrating successes of RCE initiatives at the regional level
 - reviewing periodically the governance structure and mandate of the RCE through a participatory process to ensure they are in alignment with RCE member interests
 - facilitating a periodic participatory review of the RCE theme areas among RCE members
 - providing for formal recognition (e.g., awards, certificates) of efforts by individuals or agencies on an annual basis

Appendix E: Values Reflected in the SK RCE Governance Structure

The governance structure of the RCE on ESD allocates the human, physical, and financial resources contributed by its individual and organizational members to achieve the SK RCE's:

- (1) vision and longterm outcomes;
- (2) governance outcomes;
- (3) governance structure values; and
- (4) education for sustainable development objectives (i.e., those within the priority theme areas identified by the RCE)

Periodic and ongoing evaluation of the RCE's structure are in relation to these four items.

The specific governance structure values of the SK-RCE have been identified as follows:

Efficient Use and Stewardship of Resources:

- designs structures around the specific functions and goals the elements of the structure are trying to achieve
- avoids rigidity and bureaucracy due to over-complexity
- minimizes time spent on administration (i.e., coordination vs. “governing”)
- incorporates current and evolving understandings of governance
- facilitates regular evaluation of the RCE structure, actions, and outputs in light of the RCE outcomes
- builds on successes to date and minimizes the work needed to attain comparable results
- allows for fast deliverables impacting identified RCE outcomes while facilitating long-term cumulative impacts and long-term projects
- takes advantage of best practices of other organizational structures within the region (e.g. the Saskatoon Environmental Network, Canadian Bureau of International Organization) and other global Regional Centres of Expertise (northern Germany) especially regarding structures for diversity of representation (e.g. areas of interest (e.g. representatives of the six regional ESD themes) and geographic representation (e.g., zones))
- gives appropriate weight to traditionally underrepresented areas and the ability of some areas to move faster in sustainable development (e.g. smaller towns)
- recognizes the need for both formal structures (e.g. a board with areas represented) and action subgroups focusing on the six areas of expertise based on expertise and activity as well as informal structures
- is not bound by tradition but adopts a creative and flexible approach
- has potential for legal incorporation of elements of the structure at a later date if it becomes warranted or necessary in achieving RCE outcomes and once structural elements have been tested for viability

Respecting Local Autonomy:

- balances opportunities of regional strategic planning with decentralized/grassroots decision making
- respects local autonomy by focusing on regional facilitation of locally identified

needs

- outside resources and expertise are by invitation only
- provides a loose confederation of diverse groups with distinctive and overlapping interests in ESD that come together when there is a perceived mutual benefit (e.g., through knowledge and resource sharing)
- recognizes local groups themselves determine what are the tangible ESD project outputs and that these groups determine what counts as success in meeting their ESD outcomes
- accepts that community building for ESD at the local level is a continuous process and that ESD initiatives (including their structure and purpose) will evolve over time as the communities engaged evolve
- recognizes that ESD initiatives will be successful over a variety of time horizons, with some only being realized (and realizable) over the long-term
- respects autonomy of higher education institutions participating in the RCE and academic freedom of their members

Building Human and Organizational Capacities:

- makes it easy for new participants to get involved (whether as individuals and organizations) and to connect to groups and projects to the extent they want to be involved
- incorporates an open membership structure that is accessible and recognizes diverse types of membership (e.g., corporate, individual, family, government)
- enables cooperative activity that is fun and satisfies diverse needs and talents, whether people participate as dreamers, talkers, or doers
- recognizes building relationships includes social activity
- identifies and nurtures passionate leaders in all elements of the structure
- recognizes the needs of volunteers, providing opportunities for constant renewal and regeneration of leadership within the structure
- provides local and regional recognition of individual volunteer activity and organizational efforts towards ESD
- structure empowers those who participate in it and interact with it
- structure recognizes that mistakes will be made and provides opportunities to evaluate these and learn from them
- clearly promotes the meaning and ethics associated with ESD in the structure to avoid undermining the RCE's purpose by those who may not share a commitment to these goals
- structure is sensitive to the representation of equity groups on governing bodies
- in collaboration with learning institutions, helps develop training programs and courses to facilitate the implementation of RCE goals and objectives where appropriate
- identifies and facilitates training opportunities for individuals in the region contributing to organizational development, program development, and leadership towards regional sustainable development

Building Regional Capacity for ESD:

- encourages initiatives that reflect all levels and dimensions of sustainable development
- recognizes and encourages different learning modes and cultures (e.g., oral traditions) and what can be learned from those who were here before us
- recognizes a diversity of educational forms (non-formal and informal education)
- enables and nurtures local and sub-regional centres of expertise in ESD
- identifies regional opportunities in ESD suited to a variety of individual and organizational talents and desired levels of commitment
- nurtures trust and strong organically developed connections between groups
- intentionally identifies potential for new networking and connections
- recognizes and makes use of the strengths of diverse formal and informal institutions
- facilitates transition to action (pioneering) and scaling up of activities to a regional level where appropriate

Building Capacity for Regional Knowledge and Resource Sharing for ESD:

- recognizes two types of knowledge sharing around sustainable development:
 1. codifiable knowledge that can be distributed in electronic and paper formats.
 2. tacit knowledge (e.g., know-how/skills-based knowledge and knowledge of expertise/who knows what within a community) requiring a variety of community spaces for face to face meetings, hands-on learning (e.g. ecocentres, community centres, classrooms), and sharing of sustainability tools and technologies within communities
- makes use of open source licenses (e.g., General Public License, Creative Commons License), open technologies, and open standards (i.e., creates a knowledge commons) to minimize costs, allow local control, and sharing of codified knowledge within the region and with other RCEs globally
- recognizes a diversity of capacities and methods for knowledge sharing and doesn't rely exclusively on certain technologies (e.g., such as the Internet)
- recognizes literacy is an issue and develops knowledge sharing strategies open to a variety of literacy levels
- makes use of existing and diverse forms of communication (e.g. newsletters of local organizations, shaping business marketing and advertising to promote regional sustainability)
- makes use of electronic communication and networking technologies where appropriate and feasible to connect people and share resources (e.g., Internet, videoconferencing)
- facilitates the creation of interactive, demonstration projects and buildings in our communities (e.g., building and designing a school with natural lighting, clean air etc.) and recognizes existing and new state of the art facilities (e.g. First Nations' centres (schools and other initiatives), seniors centres)
- allows for identification and reporting about what the region is doing

Note: The first feature emphasizes *wise stewardship of resources* (e.g. human, physical, social, natural, and financial capital) entrusted to the RCE, the second emphasizes the

need *to respect autonomy for local community building around ESD to flourish*, the third emphasizes building the capacity of *the individual membership* of the RCE (e.g., individuals and organizations) for ESD, the fourth emphasizes the need to build the regional *structural relationships* between these individual elements within the RCE, and the fifth the central *functional processes* around knowledge sharing for ESD.

Appendix F: Letters of Support for the SK RCE on ESD Proposal

Craik, Saskatchewan

Rod Haugerud, Mayor, Town of Craik

Glenn Hymers, Chair of the Steering Committee, Craik Sustainable Living Project

Regina, Saskatchewan

City of Regina

Brian Hamblin, Director of Corporate Services, City of Regina

Community Organizations

David Baron, Director, Royal Saskatchewan Museum

Lyle Benko, L*A*M*B* Consulting (Inc), Environmental and Educational Consulting

Malin Hansen, Director, Regina EcoLiving Inc.

Jan Phillips, Education Programs Coordinator, Saskatchewan Science Centre

Robert Stedwill, Manager, Environmental Programs, SaskPower

SIAST

Dr. Robert G. McCulloch, President and CEO, Saskatchewan Institute of Applied Science and Technology (SIAST)

University of Regina and Federated Colleges

Faculty

Dr. Robert Anderson, Faculty of Business Administration, University of Regina

Dr. Allison Fizzard, Department of History, Campion College

Dr. Paul Hart, Faculty of Education, University of Regina

Dr. Daryl Hepting, Department of Computer Science, University of Regina

Dr. Dena McMartin, Sustainable Campus Advisory Group, University of Regina

Herman Michell, Department Head of Science, First Nations University of Canada

Dr. Garth Pickard, Faculty of Education, University of Regina

Administrative Units

Dr. Alain Boutet, Director, Office of International Cooperation & Development,
University of Regina

Dr. Allan Cahoon, Vice President (Research and International), University of Regina

Dr. Harry Diaz, Executive Director, Canadian Plains Research Center

Dr. Jon Gillies, Research Director, Centre for Sustainable Communities

Dr. Norman Henderson, Executive Director, Prairie Adaptation Research Collaborative
(PARC)

Dr. Mary Vetter, Academic Dean, Luther College

Saskatoon, Saskatchewan

Rob Norris, Coordinator - Global Relations, University of Saskatchewan

Province of Saskatchewan

David Forbes, Minister of Environment, Saskatchewan Environment

Donna Magnusson, Executive Director, Primary Health Services, Saskatchewan Health