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Public Policy and Sustainable Development: Agenda (21) for Change?

Saeed Parto & David Doloreux

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MERIT – Maastricht Economic Research Institute on Innovation and Technology

PO Box 616
6200 MD Maastricht
The Netherlands
T: +31 43 3883875
F: +31 43 3884905

http://www.merit.unimaas.nl
e-mail:secr-merit@merit.unimaas.nl

International Institute of Infonomics

c/o Maastricht University
PO Box 616
6200 MD Maastricht
The Netherlands
T: +31 43 388 3875
F: +31 45 388 4905

http://www.infonomics.nl
e-mail: secr@infonomics.nl

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Saeed PARTO
Maastricht Economic Research Institute on Innovation and Technology
(MERIT)
University of Maastricht
P.O. Box 616, 6200 MD Maastricht
The Netherlands
Tel: 31 (0)43 388 33 52
Fax: 31 (0)43 388 49 05
s.parto@merit.unimaas.nl

and

David DOLOREUX
Division of Innovation, Department of Design Studies
Lund Institute of Technology
Lund University
22100 Lund, Sweden
Tel. +46 (0) 46 222 46 34
Fax. +46 (0) 46 222 44 31
David.Doloreux@innovation.lth.se

Abstract

Agenda 21-inspired local visions and goals have not translated into actual local change. Increased interdependencies and interconnectedness at the global and other scales, inherent to varying degrees in all definitions of sustainable development, necessitate adopting a multi-level, multi-scale, multi-system, and integrated approach for analyzing the development and implementation of Agenda 21-based policies. Adopting such an approach this paper examines the causes for the failure by the Regional Municipality of Waterloo to meet its objectives on sustainability. The picture that emerges from this study is one of dissatisfaction with bureaucratic rhetoric, concerns about increased polarization, disagreement with the focus on economic growth at all costs, weak or inadequate regulatory tools to curb unsustainable activity, the size and complexity of problems to be addressed, unwillingness by politicians to take charge, inadequate discourse mechanisms, and there not having been a serious, acute local problem to rally everyone around a common goal and into action. This paper identifies "Systems-related Factors" and "Inter-relational Factors" as constituting barriers to sustainability at a regional scale. The paper concludes with a discussion of the implications of its findings for policy.

Introduction

Amid much hope and hype Agenda 21 was released as the official document of the Earth Summit in Rio de Janerio in 1992 to provide a multi-level, multi-scale, and multi-system vision of sustainable development along with some implementation suggestions. The document consists of four sections collectively containing a total of forty chapters on various aspects of sustainable development, quoted famously from the Brundtland Commission's report as "…development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED 1987). Though primarily viewed as an "environmental" document, Agenda 21 was also an admirably ambitious attempt to simultaneously address uneven development and the related issues of poverty and gender inequality (chapters 2, 3, 7, 24, 25), unsustainable consumption patterns (chapter 4), population growth (chapter 5), integration of social, economic and ecological systems (chapters 8, 10, 13, 14, 16, 27, 28, 29, 30, 31), cooperation and capacity building (chapters 34, 37, 38, 39, 40), and scientific research and education (chapters 35, 36).

Signed by 178 national governments Agenda 21 provides a comprehensive plan of action to attain sustainable development at the global, national, and local scales. The action is to be initiated by governments and "major groups" in every area in which humans impact the environment. Significant detail is provided on the scales at which these actions were to be taken with implications for geographic areas, governments, communities, industry, trade unions, and local, state/provincial, national, and international (private and public) institutions. This paper investigates the failure by the Regional Municipality of Waterloo to meet its official commitment to sustainability. Given the multi-dimensionality of sustainability as a concept, working definitions for levels, scales, and systems are provided followed by an introduction of

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Gibson's (2001) "General Sustainability Principles". The information from interviews and secondary data sources is analyzed to underline the main causes for the Region's failure to meet its sustainability objectives and to highlight some of the main barriers to attaining sustainability at the local scale.

Sustainability and levels, scales, and systems

Since the publication of *Our Common Future* in 1987 the concept of "sustainable development" or "sustainability" has emerged as equitable integration of social, economic, and ecological priorities (Gibson 2001) at all scales from local to global, over the long haul. Complexities in planning, administration, markets, traditions and choices, and their inter-relations necessitate contextualizing policy and action on sustainability at different levels of inter-relation, scales of governance[1], and systems. Inter-relations may be grouped into four levels: individuals at large (social), individuals within the same organization (organizational), organizations within the same institutional order (institutional), and "functionally differentiated institutional orders" (societal).[2] The cohesion or the quality of inter-relations at each level is determined by the degree of trust among the actors at that level. The success or failure in increasing trust in inter-relations at each level is dependent on how effectively trust can be instituted at the other levels inter-relation.

The *scale* of governance may be sub-national (regional), national, international, transnational, or global. A scale of governance is continuously subject to the "expansion / compression" tendencies of capital movement toward maximized surplus value.[3] Geographical scales, e.g., "the region", are socially constructed rather than

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[1] "Governance" in this case may be defined as "strategic and goal-oriented activity" (Goodwin and Painter 1997:26) at local, national, international, transnational, and global scales.
[2] The levels are adapted from Jessop (1997).
[3] This is an expression of Harvey's (1989) "time-space compression".

ontologically pre-given (Brenner 1998:460). An "in equilibrium", steady state

economy not compatible with ecological or social sustainability is continuously

challenged by a multiplicity of social and ecological factors that "regulate" what

occurs in the whole, larger system as economic activity most certainly does.

"*Systems*" are used in Agenda 21 to refer to geographic, social, economic, and

political subsystems. "Multi-system" is used here to capture an integrated whole

comprising social, political, economic, and ecological systems. The terms "socio-

ecological" or "socio-economic" are used to refer to "social and ecological" or "social

and economic" rather than references to composite "in-between" systems comprising

parts of more than one system (table 1).

Table 1. Levels, Scales, and Systems

Levels of inter-relation [1]	**Social:** Among individuals at large based on interpersonal interdependence where many actors are involved. **Organizational:** Within organizations to secure internal cohesion **Institutional:** Among organizations to maximize adaptability of individual organizations so as to make compatible respective operational unities and independence with *de facto* material and social interdependence on other organizations. **Societal:** Among operationally autonomous (or closed) functional systems each with its own autopoietic codes, programmes, institutional logics and interests in self-reproduction.
Scales of governance [2]	Local (subnational), national, international (between nationally constituted, functionally differentiated institutional orders), transnational (passing through national boundaries), and global (covering the globe as a whole).
Systems	The whole (Earth-based) system consists of numerous (sub)systems such as social, economic, political, and ecological. Systems may be composite and made up parts from two or more (sub)systems, e.g., socio-economic.

[1] Adapted from Jessop (1997)
[2] Adapted from Mann (1996) and Jessop (1997)
[3] Jessop (1997:102) defines "autopoiesis" as a condition of radical autonomy secured through self-organization when a system defines its own boundaries relative to its environment, develops its own operational code, implements its own programmes, reproduces its own elements in a closed circuit and obeys its own laws of motion.

The question of where, i.e., at what level, scale, and (sub)system, one would start to

pursue sustainability and what the implications are in terms of policy, action, or

research are really functions of one's geographical, social, economic, and political

positioning. Regardless of the starting point, the orientation for sustainability

endeavours must by definition be multi-level, multi-system, multi-scale, and integrative. Focusing on economic issues, e.g., the current obsession with all things competitive and directed at safeguarding the bottom line and "shareholder interests", will not do much for the sustainability of the whole system. Taking action on social issues and persuading governments to part with concessions to remedy undesirable social situations will not necessarily fix the causes of many social issues, often created by failures in the economic system. Similarly, maintenance and advancement of ecological integrity cannot be realistically accomplished in isolation from the social and economic domains as what occurs in each of these domains often has quite significant implications for ecological integrity: ecosystems "contain" the economic and social systems. The most suitable approach to simultaneously tackle this intertwined mass of issues is perhaps to sketch out a set of sustainability principles broad enough to nurture creativity and innovation and specific enough to allow assessment of policies and action that shape the course of economic development.

Table 2. General Sustainability Principles

• **Integrity:** build human-ecological relations to maintain the integrity of biophysical systems in order to maintain the irreplaceable life support functions upon which human well-being depends.
• **Sufficiency and opportunity:** ensure that everyone has enough for a decent life and that everyone has opportunity to seek improvements in ways that do not compromise future generations' possibilities for sufficiency and opportunity.
• **Equity:** ensure that sufficiency and effective choices for all are pursued in ways that reduce dangerous gaps in sufficiency and opportunity (and health, security, social recognition, political influence, etc.) between the rich and the poor.
• **Efficiency:** reduce overall material and energy demands and other stresses on socio-ecological systems.
• **Democracy and civility:** build our capacity to apply sustainability principles through a better informed and better integrated package of administrative, market, customary and personal decision making practices.
• **Precaution:** respect uncertainty, avoid even poorly understood risks of serious or irreversible damage to the foundations for sustainability, design for surprise, and manage for adaptation.
• **Immediate and long-term integration:** apply all principles of sustainability at once, seeking mutually supportive benefits.

Source: Gibson (2001)

At this more practical level Gibson (2001) offers a set of seven general sustainability principles to guide decision-making (table 2). Focusing on environmental assessment

he further argues that processes and practices need to be adjusted to "force and facilitate application of these principles in the planning and approval of projects, activities, plans, programmes, policies and other undertakings likely to affect prospects for sustainability" (page 44). Despite the focus on environmental assessment these principles could be easily adopted as they are, or in adapted form, for application to other decision-making arenas, including endeavours at the regional municipality scale to attain higher degrees of sustainability. Gibson's principles provide a reasonable foundation for integrating economic, social, and environmental concerns.

Quite apart from various ambiguities associated with the term "sustainable development" and conflicting debates on how and in which sphere(s) of life to attain it, there remains a further systemic difficulty. As the main analytical tool, neo-classical economics has come under increasing criticism for inadequacy in identifying pathways to social, ecological, and economic sustainability. The narrow scope and the unrealistic assumptions of neo-classical economics have thus far rendered some well-meaning scholars ill-equipped to deal with the "non-economic" (particularly the socio-political and the ecological) issues. Neo-classical economics is oblivious to spatial and temporal considerations and incapable of adequately encompassing learning (Hodgson 1996:1941). Reliance on neo-classical economics as the main analytical tool for studying contemporary regional economic development has led to viewing regional success only in terms of increased "competitiveness" and "innovation" without due attention to the social, cultural, political, or ecological components of regional economic development. Analytical work on sustainability has to be sensitive to spatial and temporal considerations and capable of accounting for

socio-political and ecological factors. This requires going beyond the (conceptually) limited confines of neo-classical economics.

Notable exception to this general shortcoming are studies of "institutional thickness" (Amin 1999; Amin and Thrift 1994; Schmitz 1993) and "social capital" (Agarwal 1991; Fox 1996; Francis 1996; Moser 1996; Putnam 1993; Schmitz 1993). Despite the limitations imposed by the neo-classical framework, these latter studies have managed to underline the importance of social and cultural factors (i.e., intense levels of inter-firm collaboration, a strong sense of common industrial purpose, social consensus, extensive institutional support for local business, and structures encouraging innovation, skill formation, and the circulation of ideas) in the emergence of new growth regions (Amin and Thrift 1994, 1999). Economic life is thus viewed as an instituted process and a socially embedded activity and therefore context-specific and path-dependent in its evolution (Amin 1999:366). However, this body of literature remains oblivious to the importance attached to the (natural) environment in writings on organizations, regions, and economies over the last few years. In addition, the study of social and cultural factors and learning seems to be removed from the higher scale, i.e., beyond the "network", issues of equity and social cohesion.

Our premise is that "the environment" can and must assume a central place in the analysis of regional economic development since it uniquely cuts across modern society's conventional polarities and boundaries and is capable of forming diverse partnerships and goal-oriented alliances. Much of the environmental literature focusing on the role of industry is about the very same collaborative local arrangements that commentators on regional economic development describe and

prescribe. "The local" is as central to sustainable development and environmental literatures as to regional economic development literature including various studies of "learning regions" (Amin and Thrift 1994, Florida 1995, Cooke and Morgan 1998), "cluster" studies (Porter 1998, Holbrook and Wolfe 2002, Maskell and Malmberg 2002), and "regional innovation systems" (Cooke and Morgan 1998, Asheim and Isaksen 2002, Doloreux 2002). Cooperation, collaborative arrangements, partnership, and integration of diverse activities based on a shared vision of ecological sustainability form the central focus for much of the literature on "ecological modernization theory".

Ecological modernization theory is a relatively new field of study concerned with how economic development in industrial countries could be modernized so as to minimize or eliminate environmental degradation closely associated with industrial economies (Cohen 1997; Gouldson and Murphy 1998; Hajer 1995; Mol 2000). Its aim is to harness the power of human ingenuity for the purposes of harmonizing economic advancement with environmental improvement. As such, ecological modernists point to the potential synergy that could be tapped into by combining economic development and environmental protection. This combination could be facilitated through environmental reforms in social, economic, and industrial policy making and institutional (re)designs to safeguard humans' sustenance bases. Comparable emphases are placed on the roles of the state and the market (and its entrepreneurial agents) in bringing about the ecological transformation necessary for "sustainable development".[4] Ecological modernization focuses consists of two main elements.

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[4] Note should be made here that ecological modernists almost exclusively view sustainable development in terms of "environmental" well-being.

First, from a macro-economic perspective, ecological modernization "seeks to establish a policy framework that promotes structural change …[through] moving away from energy and resource-intensive industries towards value and knowledge-intensive industries" (Gouldson and Murphy 1998:3). Such a move would be facilitated through structural and technological change. Second, at the micro level, ecological modernization places emphasis on the invention, innovation, and diffusion of new technologies to drive the move at the macro level. Attention is also paid to institutional and cultural dynamics of ecological modernization.

Table 3. Basic Tenets of Ecological Modernization Theory

- environmental problems are challenges for social, technical, and economic reform, rather than immutable consequences of industrialization;
- planning practices need to become anticipatory and based on the precautionary principle;
- core social institutions of modernity need to be transformed – perhaps beyond recognition – so that they can internalize ecological responsibility. These include science and technology, production and consumption, politics and governance, and the market's institutions at multiple scales (local, national, and global);
- governments must take the lead in promoting innovation in environmental technology through strict, proactive, and goal driven regulatory regimes; and
- ecological modernization is the potential source of future economic growth.

Based on Cohen (1997) and Mol (2000)

Where ecological modernization literature is weak in addressing the practical implications of its blueprint approach (table 3), studies of learning regions, industrial clusters, and regional innovation systems offer much needed detail and potential strength for attending to such issues as context specificity, culture, history, and their interplays with the institutions of governance.

Research Design and Fieldwork

The research was undertaken to examine the causes for the failure by the Regional Municipality of Waterloo to implement its policy on instituting "sustainable regional communities" within the Region. The conceptual framework developed for this

research draws on ecological modernization theory (Gouldson and Murphy 1998) and studies of learning regions (Cooke and Morgan 1998), cluster development (Maskell and Malmberg 2002), and regional innovation systems (Asheim and Isaksen 2002). This framework was used to design a set of questions for interviews with key informants. The fieldwork focused on collecting individual "stories" or narratives from the main institutional actors / key informers about the subsystem under study. In designing the interview questions, efforts were made to move away from specific policy items, e.g., transportation, welfare/income, housing, and "environmental" projects such as water and energy conservation or remediation programmes, in order to focus on the broader causes that determine success or failure of such policies. The questions were partly focused on establishing what constituted some of the main barriers to attaining sustainability and the key informants' views on how the barriers could be overcome or accounted for in development and implementation of policy to attain sustainability.

The key informants were drawn from formal institutions. The term "institution" is used very loosely here and refers to societal constructions and structures characterized by a significant degree of "permanency". These include governments (municipal, provincial, and federal), large firms, industrial associations, business networks, trade unions, chambers of commerce, farmers associations, community / citizens' forums and networks, universities, financial institutions, religious institutions, and mass media.[5] It is important to underline the significance of "key informant" status of the interviewees in this research. Key informants do not "represent" a larger sample or population. In research work based on "Grounded Theory" (Strauss and Corbin 1998), background research is carried out on potential interviewees to determine their status

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[5] For "permanency" as a defining feature of institutions see Neale (1987) and Hodgson (1988). For a discussion of the multiple meanings associated with the term "institution" see Parto (2003).

as key informants. The background research for this project consisted of reviewing secondary data such as official publications and newspaper reports to identify authors and/or key characters or players in the subsystem. The key informant status of potential interviewees was finalized by soliciting the opinions of key informants / key players about the status of other key informants / key players.

The significance of the information gathered through the interviews was thus not solely determined by how many interviewees made the same set of observations or alluded to the same phenomena. In the analysis of the field notes reported below, the opinion of one key informant is sometimes given the same degree of attention and weight as an opinion by a group of key informants. The comments by the key informants were treated as informed and/or expert opinion. It is also important to note that no attempt was made to analyze interviewee responses based on gender, occupation, cultural and ethnic backgrounds, or ideological and religious beliefs. As crucial as these factors are in shaping individual opinions and actions in relation to sustainable development, and thus meriting dedicated research projects of their own, they were examined in this research. The key informants were drawn from two "domains": the Waterloo Region and "External", the latter comprising supra-local formal institutions. The interviews took place between December 2000 and July 2001. Interviews were no longer attempted when it was felt that no new data were being collected and that new data would only add, in a minor way, to the many variations of major patterns (Strauss and Corbin 1998). QSR Nudist Vivo text analysis software was used to analyze the transcribed interviews in light of the literature and the analysis of secondary data to generate the findings reported in this paper.

The next section introduces the Region of Waterloo as the case study for this research, followed by a description and assessment of the Region's Official Policies Plan (ROPP) in light of the evidence provided through secondary data sources. Key informant comments on the causes of the Region's failure to attain sustainability are then analyzed from a multi-level, multi-scale, and multi-system perspective to identify the "systemic" and "inter-relational" barriers to regional sustainability. The paper concludes by underlining some implications of the findings for policy, action, and future research.

The Case Study

One of thirteen regional governments in Ontario (in 1998), the Region of Waterloo comprises seven Area Municipalities: Cities of Cambridge, Kitchener, and Waterloo, and Townships of North Dumfries, Wellesley, Wilmot, and Woolwich. The Region enjoys high rates of employment in a diverse economic base, has reputable educational institutions, and is endowed with diverse natural environment, productive agricultural land, and rich aggregate deposits. The Regional Municipality was created in 1973 from the county of Waterloo and a section of the county of Wentworth, organizing fifteen local governments under seven Area Municipalities (Waterloo 1998b). Currently, the Regional Municipality of Waterloo comprises the Cities of Cambridge, Kitchener, and Waterloo and the Townships of North Dumfries, Wellesley, Wilmot, and Woolwich. The economy is reasonably diverse (table 3) with a skilled labour force. The Region boasts a diverse geographical topography, vast tracts of fertile agricultural land, and rich aggregate deposits (Waterloo 1998a). The population for the Region of Waterloo is projected at approximately 441,000 by the end of 2001 (Waterloo 1998b). Of a total labour force of 221,000 (1996 Census),

manufacturing employs the highest number of workers (26%), followed by retail

(16%), education (11%), and government services (8%).

Table 4. Employees and Employers by Sector – Waterloo

Sector	1981		1991		1996	
	%Employees	%Employers	%Employees	%Employers	%Employees	%Employers
Agriculture	1.6	N/Available	1.5	1.2	1.3	3.1
Mining, Forestry, and Trapping	0.1	N/Available	0.2	0.2	0.1	0.2
Manufacturing	36.3	N/Available	25.4	10.9	25.9	11.4
Construction	5.0	N/Available	5.9	13.1	4.7	12.9
Transportation	2.2	N/Available	2.7	2.1	3.0	2.9
Communication and Other Utilities	2.0	N/Available	1.9	0.4	2.0	0.6
Wholesale Trade	0.6	N/Available	1.3	8.4	0.9	8.3
Retail Trade	15.7	N/Available	15.9	14.6	16.1	16.3
Financial, Insurance, and Real Estate	5.8	N/Available	6.8	10.0	6.4	6.8
Business Services	6.2	N/Available	8.7	13.4	10.0	10.9
Accommodation, Food, and Beverages	4.5	N/Available	5.3	5.4	5.5	6.3
Unclassified	3.1	N/Available	4.7	12.1	5.4	12.0
Government Services	3.6	N/Available	4.4	0.1	3.2	0.1
Health and Social Services	3.7	N/Available	4.5	6.9	4.5	7.4
Education	9.5	N/Available	10.8	1.4	11.2	0.7

Based on Shearmur (2001) for employee statistics and Statistics Canada (2002) for employer statistics

Because of the level of aggregation in the available statistics it is difficult to

determine with certainty the extent to which "ecological modernization" has occurred

in the Region's economy. It is evident nevertheless that in broad terms the trajectory

of the Region's economy is consistent with that indicated with in the main trends at

the national and provincial scales, suggesting that perhaps the regional trends are

reflections of a more systemic, (unsustainable) macro environment. As far as smaller

variations, Waterloo Region seems to have fared better than Ontario and Canada in

terms of maintaining, and marginally increasing, its share of manufacturing jobs in

1996, compared to 1991. Also compared to 1991, the share of jobs in transportation

fell across Canada and Ontario but marginally increased in Waterloo Region. Share of

jobs in agriculture fell in line with the provincial and national trends. It is difficult to

determine with certainty the extent to which ecological modernization has occurred in each of these economies in part because of the level of aggregation in the data.

It has to be noted that ecological modernization of the economic structure and infrastructure would not necessary or significantly change the overall makeup shown in table 3 and the corresponding tables for Ontario and Canada in the appendix. The experience of operationalizing ecological modernization principles in some European economies suggests, however, that one could expect to see increases in employment in the public sector (government, education, and social services), agriculture, transportation, and construction as results of systemic changes in the structure of the economy.[6] Also, ecological modernization of the economic structure and infrastructure would not necessary or significantly change the overall makeup shown in tables 3. The experience of operationalizing ecological modernization principles in some European economies suggests, however, that one could expect to see increases in employment in the public sector (government, education, and social services), agriculture, transportation, and construction as results of systemic changes in the structure of the economy.[7]

Evaluation of the Regional Official Policies Plan (ROPP)

The 1998 edition of ROPP is an amended version of the original Regional Official Policies Plan, approved in 1976 "after significant public consultation" and further reviewed in 1991 to "address the social, economic, and environmental changes which have occurred since the inception of the Region". The document was intended to "reflect changes in public values [and] better integrate land, infrastructure,

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[6] Though not specifically commenting on ecological modernization (but certainly concerned with environmental well being), Hudson and Weaver (1997:1653) make a similar argument.
[7] Though not specifically commenting on ecological modernization (but certainly concerned with environmental well being), Hudson and Weaver (1997:1653) make a similar argument.

environmental and social policies, and establish a mechanism to monitor success of key policies". ROPP is a public document and was devised using "a 'grass roots' public participation, education and community awareness program" consisting of a "Vision Phase" resulting in "Vision Principles", "Policy Directions" to implement the Vision Principles, and drafting and revising policies "based on further public comment" (p.5). The document sets out the Regional Council's policy on "future economic, social, and land use changes within the Region of Waterloo to the year 2016" (p.1). According to the Planning Act and the Regional Municipality of Waterloo Act, public works and municipal by-laws are required to conform to ROPP. Area Municipalities are also required to bring their Official Plans into conformity with ROPP.

ROPP is intended to provide a broad policy framework for maintaining or enhancing the long term physical, agricultural, environmental, social, economic and heritage resources of the region. As such the document is concerned with public and private sector decisions regarding immediate and long term land use, servicing, transportation, infrastructure investment, and economic matters in the region. ROPP contains policies to preserve and enhance important natural and cultural resources so as to make the most effective use of our limited resources so that future generations can continue to enjoy them (p.1-2). ROPP claims to be based on a vision of achieving a "Sustainable Regional Community", defined as "… a community working in harmony with the environment and striving to provide its citizens with safe, prosperous communities through proactive policies and appropriate economic, social and physical growth" (p. 3). The document is an attempt to provide a strategic context for infrastructure investment; interpretation and application of Provincial legislation, regulations and policies; and a broad policy framework for Area Municipal Official

Plans and their implementing mechanisms. To attain a Sustainable Regional

Community a balance is prescribed between the six elements of: environmental

integrity, planned growth, economic vitality, partnership, public participation, and

safe and healthy communities (table 4).

Table 4. Elements of a Sustainable Regional Community - Waterloo

Environmental Integrity: to maintain and enhance the natural environment in order to protect the life support systems of soil, air and water, conserve the presence of wildlife and plants native to the region, and to strive for the sustainable use of natural resources.
Planned Growth: to proactively plan, co-ordinate and stage the use of land and provision of services in order to efficiently and effectively use the region's resources.
Economic Vitality: to diversify and strengthen the economic base in order to increase jobs and income generated in the region.
Partnerships: to encourage partnerships and co-ordination among Federal and Provincial Ministries, the Region, Area Municipalities, the Grand River Conservation Authority, other government agencies, the private sector, and the community.
Public Participation: to encourage the meaningful participation of a broad cross-section of the regional community in developing and monitoring public policy.
Safe and Healthy Communities: to enhance the well-being and quality of life of the residents of this region, and to recognize that planning is about people at the individual, neighbourhood and community level.

Compared to other Official Plans ROPP is reasonably detailed and elaborate.

Assessed against the sustainability principles ROPP's elements seem somewhat

incomplete, however. The document has little or nothing to say about "sufficiency and

opportunity", "equity", "democracy and civility", "precaution", and integration.

Emphasis is placed instead on "partnerships" and "meaningful public participation".

Despite the adequate level of detail on the specifics of most of the policies, there

appear to exist no supplementary guidelines, tools, or public reporting mechanisms to

plan, implement, monitor, take corrective action, and review policy in light of

monitoring data. No major documents exist to provide insights into how, or how

successfully, the Region is fulfilling its commitment to a "sustainable regional

community". The Region faces many of the same difficulties being experienced by

local communities throughout southwestern Ontario. The Region of Waterloo does

not seem to have gone beyond the policy formulation stage in attaining a sustainable regional community.

Insights into whether and how ROPP has affected the Region is provided to some extent in a discussion paper titled "Waterloo Region Quality of Life Index", published by the Social Planning Council of Cambridge and North Dumfries (Brunswig, DeSantis, and Klassen 1998), and updated in 2000 (Vandebelt, DeSantis, and Beaulne 2000). The Social Planning Council undertook this project in order to identify factors that affect quality of life, stimulate awareness and discussion about the quality of life in the Waterloo Region, help decision-makers make more informed decisions in light of quality of life information, and support ongoing dialogue (Brunswig et al.1998:iv). The project selected twelve indicators, three from each of the four main categories of social, economic, environmental, and health (table 5).

Table 5. Quality of Life Indicators

Social Indicators:	**Environmental Indicators:**
Child Welfare Admissions to Care	Hours of Moderate/Poor Air Quality
Social Assistance Beneficiaries	Toxic Spills
Public Housing Waiting Lists	Tonnes Diverted to Blue Boxes
Economic Indicators:	**Health Indicators:**
Unemployed in Labour Force	Low Birth Weight Babies
Employed in Population of 15+ years	Long-term Care Facility Waiting List
Bankruptcies (consumer and commercial)	Suicides

Source: Social Planning Network of Ontario / Ontario Social Development Council, cited in Brunswig et al. (1998)

Using Statistics Canada data for the 1990-1997 period, the 1998 discussion paper reported deterioration of child welfare and upward trends in social assistance beneficiaries, public housing waiting lists, unemployed labour force (while the absolute number of those employed went up), bankruptcies, toxic spills, long-term care facility waiting lists, and suicides. A downward trend was reported for tonnes of garbage diverted to blue boxes. There was also a downward trend in the birth weight

of newborns. The trend for number of hours of moderate/poor air quality was upward except for 1993 where the trend shows a downward spike. The combined "Waterloo Region Quality of Life Index" dropped down to lower than 50% of the 1990 baseline. This resounding failure by the Region of Waterloo, and indeed numerous other regions across the globe, to move away from unsustainability underlines a need to gain better understanding of the causes for failure and how this new knowledge could inform research, policy-making, and action-taking.

Key to understanding such a significant deterioration in the quality of life in the Waterloo Region is to gain insight into the opinions of individuals with specialist knowledge about the Region whose perceptions, decisions, and actions are likely to have a bearing on the course of events in the Region. Key informant comments on the Region's performance against its commitment to sustainability are analyzed in the next section to present a multi-dimensional view of the events and factors whose combination might have led to the failure by the Region to meet its sustainability objectives.

Key Informant Perspectives on Causes of Failure

To gain further insights into the causes of the Region's failure to attain sustainability a series of open-ended questions were put to twenty-two (22) key informants within the Region and seventeen (17) key informants external to the Region.[8] The informants were asked to comment on two main areas: 1) factors that facilitate or curtail instituting a "sustainable regional community" within the Region and 2) strategies for moving away from "unsustainability". Numerous key informants confirmed the

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[8] The descriptions for the codes used to identify the key informants in the text are listed in the appendix.

intuition inferred from secondary data about the unsustainability of the current economic trajectory. For example, one community activist observed,

> We rally people around for nine years and tell them about sustainability and in the tenth year we still have not made significant strides around the UniRoyal[9] problem and the proliferation of box stores (RW-38-CG).

Another activist drew attention to the gap between written policy and action, stating,

> we do exercises like 'Imagine Waterloo'[10] and plan for the next 5 to 10 years while we watch the disparity between the rich and the poor increase in the community and compared to other places (RW-49-CG).

Inadequate institutional support is partly to blame for such failures in policy implementation (RW-41-LI). One interviewee suggested that there had been a regress in development toward sustainability in the Waterloo Region. Two concurrent developments were cited as effecting this regress. First, there now seemed to be institutionalized poverty: soup kitchens were an "institution" within the community while families lived in church basements and on food from the food banks (RW-46-RG). Second, the Region was said to be obsessed with accommodating the needs of high tech industry. Over the last 10 years the Region's economy had progressively been moving toward high tech, high capital, high paying industry while the population has become more polarized than before. The polarization was occurring because the infrastructure was being reorganized to provide services to high income families and

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[9] Since the early 1940s UniRoyal has manufactured plastic explosive stabilizers, rubber, war chemicals (including Agent Orange), rubber chemicals and agrichemicals. Government and non-government organizations have long held that a combination of rubber chemicals and agrichemicals have combined underground to form NDMA (N-nitrose dimethylamine), an A2 carcinogen, mutagen, and a teratogen and contaminate three aquifers at varying levels under the plant which is located in Elmira, Region of Waterloo.

[10] A visioning document published by the City of Waterloo, in the Region of Waterloo.

individuals. With the arrival of more high tech companies the Region was willingly

giving prime land to developers to build houses for "the dot.com entrepreneurs" while

losing sight of the fact that "the low income people like cafeteria workers who serve

these [high tech] firms also have social and housing needs" (RW-46-RG).

These developments were attributed in the main to the change in the political

landscape of Ontario since 1995.[11] The new political regime was said to have caused

confusion of roles and a blurring of the division of labour between the province and

the regional municipalities:

> The local government has always been a service provider. A lot of the issues
>
> we are faced with right now in the Region are things like skewed income and
>
> wealth distribution. We also find ourselves dealing with financial issues that
>
> are more sort of macro-policy questions, and I don't think that's right. I'd like
>
> to see [the province] get back to doing macro government and let us be the
>
> hands-on service providers because we are very good at that (RW-46-RG).

Beyond the local and provincial scales, another interviewee observed, there is a

fundamentally structural issue that needs to be addressed:

> Here in the northern world, the typical family has two full-time wage earners,
>
> spends increasingly long periods of time in the workplace, and pays through
>
> taxes for lots and lots of infrastructure to sustain an unsustainable lifestyle.
>
> Most people have stressful jobs, severe shortages of time to do social and
>
> community oriented things, very short holidays… it just seems like a hopeless
>
> situation. The provincial government works actively against sustainability

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[11] A right wing government (Progressive Conservatives) was elected in the province of Ontario in 1995, defeating a particularly unpopular, centre-left government led by the New Democratic Party.

[while] the federal government does a few things and pays lip service…"

(RW-41-LI).

Given the environmental focus of ROPP and the macro nature of most of the concerns raised by the key informants it was perhaps not surprising that numerous interviewees alluded to visions of sustainability more or less consistent with the various tenets of ecological modernization theory. To engage the interviewees in a dialogue on the political implications of structural change for sustainability each interviewee was asked to look at the basic tenets of ecological modernization theory (table 3) and then comment on how economic activity and ecological integrity could be reconciled.

A federal government official commented that official commitment to sustainability needed to be matched with regulatory measures at the highest level to attain sustainability. However,

> If you look at the history of pollution in Ontario and Canada, really, there are not many hard regulations relative to other countries like the U.S. …We lag behind the U.S. by about 10-15 years when it comes to air quality regulations and we are paying an incredibly dear price for this (EX-3-FG).

Change at this macro scale requires challenging "the traditional roles and responsibilities" (EX-12-QG). This proposition seemed intuitive to one business interviewee who observed,

> if you have an industry-wide or sector-wide initiative, it is a lot more palatable for people to make the necessary changes. There may be synergies, too, ten businesses doing something together is not ten times more expensive than getting one to do it (EX-1-FI).

A quasi-government interviewee stated,

> a third of municipal government spending is on environmental services [such as] water, waste, transport, etc. This money could be spent wisely to promote energy efficiency and lifecycle effective products in all of their purchasing. The same approach should be followed for infrastructure development (EX-6-QG).

But governments are not taking these obvious steps because "any change is a risk and the current infrastructure does not support risk taking". Measures to encourage experimentation have to include "additional funding, peer teaching, facilitating the creation of joint committees, and networking…to create conditions that support risk taking (EX-6-QG). Without these measures, "you are not putting your money where your mouth is, really" (EX-26-CG).

With ecological modernization as the goal and equitable discourse as the process, the strategy will need to go beyond "just making up regulations" as a reaction to what has gone wrong within the system (EX-12-QG). Underrepresented social groups such as E/NGOs and trade unions need to be more centrally involved in the discourse because the former are capable of offering alternative perspectives while the latter are affected by changes in the production system (EX-16-TU). In addition to structural changes to the economy, ecological modernization requires a shift of focus from looking for the next major employer to set up shop in the region at any cost to instituting small scale, home-grown, and diverse local economies supplemented with externally recruited businesses that "fit" the local economies (EX-28-CG; RW-35-QG).

In line with this inward approach, brownfields could be redeveloped to eliminate the need for appropriating valuable agricultural land for industrial activity and

"sustainable landscaping and design and implementation of energy efficient operations could be made mandatory for industry" (RW-35-QG). This approach requires

> shifting our focus from the 'growth cycle' to development and
> sustainability…. We need to determine through our planning activities what
> we can afford now and in the future (EX-30-RG).

This change of focus must be instituted through a system of incentives and disincentives aimed at restructuring the economy (EX-32-RG) and supported by "people who create new ideas with lots of energy and ability, and an institutional backup to facilitate implementation of these ideas" (RW-41-LI). Slowing and directing economic growth, developing effective public transit systems, and prevention of sprawl would mark this change of focus (RW-44-RG). Most importantly, "there needs to be a plan so that you can integrate priorities over a period of time, not just for the moment" (RW-46-RG).

Comments were sought from the interviewees on the reasons for the Region's, and indeed Canada's, failure to ecologically modernize following the examples of Germany, The Netherlands, and Denmark. Based on the European cases and the comments from the key informants interviewed for this research, it appears that not striving for ecological modernization has less to do with lack of knowledge and "innovative capacity" and more with unwillingness of leading individuals bolstered by institutional / organizational inertia. As one interviewee put it: "When the commitment is not there, people just blame it on the lack of resources" (EX-3-FG).

Some interviewees pointed out that commitment to sustainability at the local scale had to be linked to an acute local problem or else it would not work. The implication was

since Waterloo is a reasonably well-to-do Region, policy makers are not forced into thinking about drastic change, limiting their commitment to sustainability to having an official vision statement:

> part of the problem [in Waterloo] is that no one has gone through a process and really asked what the problems are, or ask what we need to do to be sustainable. …[We need to] look at issues relating to growth versus development (RW-36-RG).

It is reasonable to suggest that because Waterloo has not experienced the same magnitude of social and economic hardships as other municipalities in its recent past, the impetus has been weaker in Waterloo to operationalize ROPP's "sustainable communities" objective.[12] However, with or without socio-economic problems as incentive to adopt Agenda 21 or other visions of sustainability, a major factor in facilitating ecological modernization is the political will of the elected officials. One interviewee observed,

> we are sending people over all the time to have a look at and learn from these successful [sustainability initiatives]. They come back and say 'it's the political people who are pushing the sustainability agenda'. Somehow this conclusion doesn't really compute here in Canada (EX-3-FG).

The failure to "compute" is in part attributable to inadequacy of or the inequity in the current means of discourse on sustainability. At the educational level, for example, there is a divide between studying and what is being studied (EX-2-LI). At a higher scale, the interviewee suggested,

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[12] This comment confirms Kingdon's (1984) observation that fundamental change is almost always tied to a pre-existing problem.

we need to engage the people that stood on the streets in Quebec City [during the anti-Free Trade Agreement demonstrations] with business people. We need to do this if we are to understand why these people are being locked out behind the fortress built for the event (EX-2-LI).

Similar sentiments were expressed by a trade unionist who complained that much of the decision making at the macro level takes place without consultation with the many workers whose lives are affected by government decisions or by actions of large corporations (EX-16-TU). To be effective, governments have to engage people from all walks of life, including unionized workers (EX-26-CG). There is also a disconnect between governments and the "governed". A major obstacle to instituting discourse between government and ordinary civilians is the attitude: "I pay my taxes, government should fix everything" which hampers opportunities for broader public dialogue on sustainability (RW-36-RG). Non-participation by individuals, certain social sectors, or token participation by adversaries, leads to decisions whose outcomes may be less than satisfactory (RW-43-RG). To increase inclusiveness in the discourse process at the local scale, there needs to be a focus on

supporting municipalities in undertaking stakeholder consultations in their communities around [sustainable development] initiatives … and helping municipal governments be more accountable (EX-6-QG).

In summary, change for attaining sustainable development at the local scale seems in part to hinge on clearly defined roles and responsibilities, the presence of champions in the discourse process, conscientious and continuous facilitation by governments at the highest levels as catalysts, and recognition of and respect for conflicting interests and competing agendas. The picture that emerges from the above analysis of

interviewee comments is one of dissatisfaction of the key informants with bureaucratic rhetoric on sustainability, concerns about increased polarization within and outside the Region, disagreement with the policy-makers' focus on economic growth at all costs, weak or inadequate regulatory tools to curb unsustainable activity, the size and complexity of the problems to be addressed for sustainability, political unwillingness, inadequate discourse mechanisms, and there not having been a serious, acute local problem to rally everyone around a common goal and into action. The multi-dimensional context portrayed through the above sample of interviewee comments is used in the next section to identify and divide into two groups the barriers to sustainability at the local scale as demonstrated by the case of the Region of Waterloo.

Barriers to Local Sustainability

Based on the analysis of field and secondary data two interlinked categories may be defined to encompass the main factors that regulate, in the broadest sense, sustainability endeavours at the local scale (table 6). "Systems-related Factors" are macro in nature and typically tackled through consistency in policy at all scales. Actions by isolated individuals or organizations are likely to have minimal impact on the state of the whole system. Conscientious intervention by governments through policy must be focused on instituting trust and sustainable habits, lifestyles, and routines at the individual, organizational, and societal levels. In addition, serious learning needs to occur by planners and decision makers who will need to adopt planning and decision-making frameworks that integrate, as opposed to "balance" through trade-offs, all principles of sustainability (table 2). A significant part of integrative planning and decision-making needs to be concerned with benchmarking ("where we could be"), base-lining ("where we are"), and strategizing ("where we

would like to be"). Other components of the integrative framework will include

reliable monitoring and systems of accountability to ensure that the development

trajectory is checked and remains on track.

Table 6. Systemic and Inter-relational Barriers to Regional Sustainability

Systems-related Factors	Inter-relational Factors
• Inadequate Education System • Linear Thinking / Lack of "Systems Thinking" • Inadequate Planning Frameworks • Inadequate Decision-making Frameworks • Inadequate Institutional Capacity • Inadequate Infrastructure • Lack of Standardized Sustainability Performance Assessment Frameworks • Inherently Unsustainable Economic System • Enormity of Scale of Problems • Consumerism	• Lack of Trust Between Organizations / Institutions • Lack of Cooperation • Low General Awareness / Lack of Communication • Negative / Passive Role of Mass Media • Isolation of Decision Makers • Business Lobbyists Against Sustainability • Others' Resistance to Change • Mainstream Religious Beliefs in Dualism • Lack of Compassion

The second category, "Inter-relational Factors", is based on interviewee comments on

the "quality" of the inter-relations at different levels. A number of key informants

expressed concern about a lack of sufficient trust between the regional and provincial

governments adversely affecting inter-relations between government organizations.[13]

Intent at the policy level to effect change in the direction of sustainability was said to

be systematically undermined by a general lack of awareness among key actors,

failure to diffuse new information by formal government institutions, lack of interest

by mass media in matters of sustainability, uneven distribution of political influence

with businesses maintaining a significant voice both in volume and impact,

demoralization with attempts to overcome institutional rigidities, and unwillingness

by the main actors to collaborate as equal partners.

The analysis of the secondary and field data points to the instrumentality of the supra-

local regulatory factors in shaping the local regime of accumulation and determining

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[13] This lack of trust has also been underlined by the Association of Ontario Municipalities in its survey of Ontario municipalities (AMO 2001a).

the closely associated social and environmental states. More generally, the interplay between the sets of institutional norms and forms at the sub-national, national, international, and global scales shapes the outcomes of sustainable development or other policy mandates at the local scale. With some notable exceptions, modes of social regulation at supra-local scales define and determine the local regime of accumulation. The local is vulnerable to pressure from higher scales because of size and relatively insignificant political and economic clout. Local contestations against supra-locally imposed forms often result in modified or changed mode of regulation at the local scale along supra-locally determined lines. Put differently, regulation seems to flow downwards from the top (higher scales) to the bottom (local scale), seldom the reverse.

In the Region of Waterloo there is significant gap between the objectives of the Official Plan and what has to date been accomplished on the ground. The persistence of the unsustainable status quo may be related to two sets of factors. At the institutional level the agent's ability to pursue sustainability objectives appears to be frustrated by misconceptions, political differences, and power relationships. At the structural level regional specificities, methods of discourse on policy and action, scale or jurisdictional issues, and the quality of inter-relations among organizations and institutions have failed to constitute a "negotiated" form of governance based on an equitable and ecologically sound compromise.

Without mutual trust and high quality inter-relations among individuals at large, individuals within and among organizations, and among institutional orders it is at best difficult to institute anticipatory planning practices based on the precautionary principle, transform core social institutions to serve sustainability, make significant

changes in the production and consumption systems, have representative and democratically elected governments, and effectively regulate the market's institutions at multiple scales (local, national, and global). If the ultimate goal is to effect change of relative permanency toward sustainability, institutional capacity is needed to facilitate it. But change also requires an agenda, an "integrated" strategy, and clearly defined objectives pursued by representative authorities and actors. Without clear objectives and transparent, participatory decision-making processes inertia is likely to prevail, being reinforced by habits, customs, conventions, conflicting interests, and competing agendas. Confusion, misunderstanding, counter-positioning, dogma, and misappropriation of terms such as "sustainability" replace transparency and discourse based on equitable guiding principles.

Integrated strategy for sustainability means recognizing that positive moves in one area, e.g., the economy, will not always foster positive moves in the others, e.g., the social and ecological domains. This is often the dilemma for policy makers who argue, based on conventional fallacy, that priority has to be given to economic (growth) considerations, often at the expense of the environment which they view as something that can be "fixed" in the long term. Gibson (2001) contrasts this view by pointing out that if greater efficiency, equity, ecological integrity and civility are all necessary for sustainability, then positive gains in all areas must be achieved as all these areas are interconnected and interdependent. Integrated application of sustainability principles and simultaneous reconciliation of sustainability objectives in immediate efforts is a key to substantial overall progress towards sustainability in the long run since "there is no route to the long term except through the short" (Gibson 2001: 22).

The gap between formal policy and action on sustainability indicates that sustainable development has not, as yet, been "institutionalized" at the local, provincial, or federal scales and thus is vulnerable to changes in the political regime. There is little evidence to suggest "permanency" or "institutional persistence" of sustainable development at the local, provincial, or federal scales. The case of Waterloo Region in the context of Ontario clearly demonstrates that interference based on unsympathetic political ideology undermines long established local governance norms and forms, mainly through withdrawal of enabling funds and personnel. Similarly, governments sympathetic to sustainable development (as was the case with the provincial government until 1995) are likely to provide impetus for citizen involvement and local initiatives through increased or new funding. Formal commitments to sustainability are often and easily broken for short-term political, financial, and other considerations. There is little evidence to suggest that in practical terms decision makers view sustainable development in terms of system embeddedness, interdependencies, and integration.

Concluding Remarks

Much is said about the need for capacity building in developing and developed countries to effect fundamental change. Absent from calls to build capacity is the "battle cry" or the unifying goal or purpose for the increased capacity or establishing new institutions. Capacity without a clearly defined goal associated with it is primarily relational and useful only in comparing institutional characteristics of two or more "equal" scales such as regional municipalities or provinces. Advancement toward sustainability is a strategic question and intertwined with complexities of governing socio-economic spaces. Interviewees did not want "increased capacity" for the current institutions or creation of new ones. There was no mention of or expressed

desire for new formal functions for institutions. Instead, the interviewees expressed a strong sentiment for further "development" of the informal functions of institutions. These functions included participation, transparency, accountability, and empowerment of the disadvantaged with governments acting as catalysts, facilitators, and arbitrators.

Overcoming barriers to sustainability requires appreciation of the scale of the barriers in question. If the system of production and consumption is inherently unsustainable on the account of productivism and consumerism, little can be done at the local scale to reverse the trajectory of the total system. Conscientious local government and non-government institutions committed to sustainable development could only "soften the blow" by managing the most adverse effects of unsustainability. Effecting change toward sustainability in the structure of the economic system is of course contentious and may be resolved through confrontation and/or discourse depending on the magnitude of the change sought and the specific spatial and temporal factors. Ecological modernization of the production and consumption systems begins with efforts and initiatives to "do things better". At the local municipality scale doing things better should translate into innovation in the planning and design processes to increase effectiveness and efficiency. The second stage in ecological modernization is to "do better things". Because of the issues involved, the second stage is likely to be politically charged as the foundations of the production and consumption systems need to be closely scrutinized for suitability to serve ecological well-being.

Research focused on regional sustainability as the scale of analysis limits accounting for supra-local factors that shape the local mode of regulation. The issue is not what constitutes the "best" single scale or factor for the pursuance of sustainable

development, however. We need instead to ask what combination of factors, at what scales of governance, need to be mobilized to effect change in the direction of sustainability. Such change must, to satisfy Gibson's (2001) General Sustainability Principles, lead to simultaneous improvements in the integrity of biophysical systems, sufficiency and opportunity, equity, efficiency, democracy and civility, and precaution. This implies that numerous factors from a wide spectrum of systems and scales affect the pursuance of sustainability, rendering the task of attaining sustainability as very difficult. This conclusion should not be cause for paralysis or inaction, however. A multi-level, multi-scale, multi-system, and integrated approach to sustainability values action at smaller scales while it draws attention to the need for change in the production and consumption systems at the macro scale. Consistent with the prescriptions of Agenda 21, the findings from this research underline the need for an explicitly interventionist approach from a policy perspective, supported by action from the grassroots and research from academic and scientific institutions.

Appendix

Employees and Employers by Sector – Ontario

Sector	1981		1991		1996	
	%Employees	%Employers	%Employees	%Employers	%Employees	%Employers
Agriculture	3.1	N/Available	2.5	4.2	2.2	3.6
Mining, Forestry, and Trapping	1.2	N/Available	0.9	0.7	0.7	0.7
Manufacturing	23.1	N/Available	16.6	8.0	16.2	7.9
Construction	5.4	N/Available	5.8	13.2	4.8	11.1
Transportation	3.9	N/Available	3.7	2.7	3.6	2.8
Communication and Other Utilities	3.3	N/Available	3.1	0.6	3.2	0.7
Wholesale Trade	0.6	N/Available	0.7	7.4	0.7	7.9
Retail Trade	15.8	N/Available	15.5	16.8	16.4	16.7
Financial, Insurance, and Real Estate	6.0	N/Available	6.6	8.4	6.3	8.0
Business Services	7.9	N/Available	10.6	9.8	11.8	11.6
Accommodation, Food, and Beverages	5.1	N/Available	5.6	7.1	6.0	7.7
Unclassified	4.0	N/Available	5.1	11.9	6.1	11.7
Government Services	7.3	N/Available	8.1	0.6	5.9	0.4
Health and Social Services	5.0	N/Available	5.9	7.7	6.0	8.2
Education	8.2	N/Available	9.4	0.8	10.3	0.9

Employees and Employers by Sector – Canada

Sector	1981		1991		1996	
	%Employees	%Employers	%Employees	%Employers	%Employees	%Employers
Agriculture	4.2	N/Available	3.9	6.0	3.2	5.2
Mining, Forestry, and Trapping	2.6	N/Available	2.2	2.4	1.9	2.4
Manufacturing	18.7	N/Available	14.5	6.6	13.7	6.7
Construction	6.1	N/Available	5.9	12.3	5.0	11.1
Transportation	4.8	N/Available	4.5	3.8	4.0	4.1
Communication and Other Utilities	3.3	N/Available	3.2	0.6	3.1	0.7
Wholesale Trade	0.7	N/Available	0.8	7.1	0.8	7.3
Retail Trade	15.8	N/Available	16.1	17.2	16.6	16.3
Financial, Insurance, and Real Estate	5.4	N/Available	6.0	7.3	5.5	7.2
Business Services	7.2	N/Available	9.8	8.8	11.0	10.4
Accommodation, Food, and Beverages	5.2	N/Available	6.1	7.1	6.4	7.5
Unclassified	4.3	N/Available	2.3	11.7	5.7	11.6
Government Services	7.6	N/Available	8.1	1.1	6.1	0.8
Health and Social Services	5.5	N/Available	6.4	7.2	6.3	7.8
Education	8.6	N/Available	10.0	0.9	10.6	1.0

Based on Shearmur (2001) for employee statistics and Statistics Canada (2002) for employer statistics

Coding of Key Informants

The codes used to identify key informant comments are based on the keys in the table below. For example the code "EX-14-PO-I" refers to a key informant <u>EX</u>ternal to the Region of Waterloo, who was the <u>14</u>th key informant to be interviewed, and had a main institutional association with an <u>I</u>ndustrial <u>P</u>eak <u>O</u>rganization. Similarly, "EX-3-FG" refers to a key informant from outside the Region, associated with the federal government, and the third interviewee to be interviewed for this project.

Jurisdiction and Institution Keys

Jurisdiction	Institution Type	
RW = Waterloo **EX** = External to the Region	**BF** = Business Firm **CG** = Community / Citizens Group **FG** = Federal Government **FI** = Financial Institution **IN** = Information Network **LI** = Learning Institution **MM** = Mass Media	**PG** = Provincial Government **PO-A** = Peak Organization – Agriculture **PO-I** = Peak Organization – Industry **PO-R** = Peak Organization – Religious **QG** = Quasi-Government **RG** = Regional Government **TU** = Trade Union

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