



NATIONAL ROUND TABLE ON THE ENVIRONMENT AND THE ECONOMY  
TABLE RONDE NATIONALE SUR L'ENVIRONNEMENT ET L'ÉCONOMIE

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# SELECTING PLACES TO START A CANADIAN SUSTAINABLE CITIES INITIATIVE

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## **PREFACE**

This report consists of three parts:

- Part A indicates to the National Round Table on the Environment and the Economy (NRTEE) and to the community of Canadian urban experts how The Bayswater Consulting Group, Inc. collected and applied information to select potential starting points among urban regions around the world for a Canadian "sustainable cities initiative".
- Part B contains six prospectuses for cities and urban regions chosen through the above process: Accra, Ghana; Buenos Aires, Argentina; Hanoi, Vietnam; Katowice, Poland; Santiago, Chile; and Tianjin, China.
- Part C contains information on additional cities and urban regions which could be selected as starting points, should prospective teams wish to consider alternatives to the above initial set, or should there be enough interest and energy to contemplate teams in more than six cities.

Work to develop the overall listing and ranking of potential cities was carried out by Cynthia Taha, Lisa Van Buren, and David Crenna, based on documents from many different sources as detailed below.

Specific background research on Accra, Ghana was carried by Cynthia Taha, of Bayswater, an African development specialist, in consultation with Alan Foy of Wardrop Engineering Inc. The template also reflects comments from Mark Baron of Cowater International Inc., Rhonda Gossen, and Bohdana Dutka, of the Canadian International Development Agency (CIDA). It draws on key information developed by the Ghana country team of the World Bank as well.

Buenos Aires background research was the responsibility Cynthia Taha and Lisa Van Buren of Bayswater, based on extensive information from the World Bank and from the Department of Foreign Affairs and International Trade, as well as other sources. Michael Cohen, then adviser to the Vice President of Environmentally Sustainable Development at the World Bank encouraged a close look at the potential of Buenos Aires. Tim Egan of the CONTACTO Group provided extensive and constructive comments and suggestions, as did his colleague, Francisco Wulff. In addition, Nolberto Munier, principal of TEAMIC International Inc. offered a copy of a major report which included environmental needs of Buenos Aires. He also encouraged consideration of this urban region.

Lisa Van Buren of Bayswater supported by Cynthia Taha, used information from the World Bank, DFAIT, CIDA, and other sources to develop background information on Hanoi, Vietnam. Tim Campbell of the World Bank provided useful information on the port of Haiphong, as well as encouraging inclusion of Hanoi as a potential starting city. Robert Kalnins of Sodexen provided comments on current Canadian involvement in Hanoi, as did Flora Liebich of CIDA.

Katowice background documentation was prepared by Lisa Van Buren with support from Cynthia Taha and David Crenna. Martin Crilly of the International Centre for Sustainable Cities provided extensive comments on drafts, background data and information and encouragement to include Katowice among the list of starting cities. In addition, Wit Siemieniuk of AGRA Earth & Environmental International provided details of his firm's work in the field of integrated solid waste management facilities, especially in Edmonton. John Herbert, an individual consultant, also provided comments on Canadian opportunities in the Polish environmental industries.

Santiago information was assembled by Lisa Van Buren, Cynthia Taha, and David Crenna, using documents and information supplied by Nolberto Munier of TEAMIC International Canada, Jacques Rostenne of Perwit International, and Sandra Makinson of ICLEI. It also draws on data from the Prime Minister's Office, Foreign Affairs and International Trade Canada, the Export Development Corporation, the World Bank, and other sources.

Tianjin, China background research was conducted by Chreod Limited in conjunction with Lisa Van Buren and Cynthia Taha of The Bayswater Consulting Group, Inc. Both Edward Lemman and Derek Ireland of Chreod commented extensively on draft materials. Other sources consulted were from the World Bank, the Canadian International Development Agency, and the Department of Foreign Affairs and International Trade. Aspects of the prospects for success in Tianjin were also discussed with Graham McGarva of the Vancouver firm Baker McGarva Hart, and Haiyan Zhang of ChinaBridge Communications.

David Morgan and David Crenna edited the background information for the templates in all cases. Any errors or omissions in the background data and information supplied here remains the responsibility of The Bayswater Consulting Group, Inc.

C. David Crenna  
President

## **PART A: SELECTING STARTING CITIES**

## 1. INTRODUCTION

The aim of the NRTEE "Sustainable Cities Initiative" is to explore the idea of Canadian "city teams" to combine urban environmental development projects and commercial ventures in the same global cities over a long-term relationship.

Underlying the Initiative is the assumption is that institutional, environmental and social development and business ventures can be compatible or even essential to one another, especially when placed into the context of:

- public-private partnerships for infrastructure construction and operation;
- development of ongoing manufacturing investments in given cities and regions;
- ventures providing continuous urban services to residents such as telecommunications and transportation;
- seeking an integrated path to economic, social and environmental independence and sustainability.

In each case, what appear to be conflicts of interest between public and private sector aims when viewed over a short period, e.g., building sound personal and business relationships and introducing Canadian products and services, become much more compatible over a long-term perspective.

Viewed from this angle, "one-off" trade missions can turn into special events at the invitation of the host cities. Desires for early financial returns can be transformed into lucrative long-term ventures based on the continuing viability of the host city, and demonstrated assurances that they are receiving both local employment benefits coupled with essential quality and performance guarantees.

Canadian companies pacing the corridors of International Financial Institutions in search of contracts can find friendly faces and a solid regional and local context in which to do business, especially given the decentralization of decision-making which is occurring in the World Bank and elsewhere.

## 2. PROCESS OF SELECTING STARTING CITIES AND REGIONS

After initial work on the concept of the Sustainable Cities Initiative for the National Round Table on the Environment and the Economy in the winter of 1997-98, The Bayswater Consulting Group, Inc. contracted with the Department of Foreign Affairs and International Trade (DFAIT) in March of 1998. The Terms of Reference were to "map" environmentally-salient Canadian activities in cities and urban regions around the globe.

Bayswater started with databases prepared by the Canadian International Development Agency (CIDA) and the International Development Research Centre. They supplemented this with information drawn from the Internet, trade show literature, environmental industry associations, international trade missions, and replies from individual development organizations and companies. The result was a "pool" of 172 cities and urban regions in which there was at least one Canadian project and/or interested organization engaged in some aspect of urban planning, infrastructure design and development, construction, provision of urban services, and/or municipal government capacity-building. These in turn were analyzed in detail to determine the breadth and depth of existing relationships. Were the Canadian connections diverse and deep, or narrow and shallow?

This assessment in turn yielded a "short list" of 36 cities or regions in which Canadian engagements seemed to be significant, comprising both development projects and commercial ventures. Based on further refinement of the information about these places, an even shorter list of 22 was developed. These received most attention in developing the starting "portfolio". (See table, next pages.) Five main variables came into play in determining the most appropriate starting cities and regions from amongst this shorter list:

- a current or planned major multi-faceted project to act as an *"anchor"* for *integrated development agency and company interest*;
- presence of reasonably stable, reform-oriented *government leadership and government structures* in the prospective urban region, and perhaps more generally in the country concerned;
- a substantial, documented degree of urban environmental *need, coupled with some signs of recognition on the part of municipal leaders that this need exists*;
- demonstrated Canadian public, non-profit and private sector *capabilities* which match those needs;

- potential for *environmental need to be translated into effective demand* through financing and investment opportunities open to Canadian organizations.

### CANADIAN ACTIVITIES IN URBAN REGIONS OF TRANSITIONAL AND DEVELOPING ECONOMIES

URBAN REGION (TOP 22)	NO. OF PROJECTS	TYPES OF PROJECTS/RELATIONSHIPS
1. <b>Santiago, Chile</b>	22	17 private sector venture agreements for urban projects. 2 community development NGOs engaged in urban issues. 2 university research partnerships. 1 development research project (construction).
2. <b>Buenos Aires, Argentina</b>	20	14 private sector venture agreements for urban projects. 5 partnerships for technical education and training. 1 partnerships for Internet technology transfer.
3. <b>Bangkok, Thailand</b>	15	11 private sector venture agreements for urban projects. 2 individual university partnerships. 2 university consortia.
4. <b>Accra, Ghana</b>	13	8 private sector projects (infrastructure and environmental, some with CIDA support). 1 development research project (urban agriculture). 1 university technical education partnership. 1 municipal partnership. 1 university consortium (UNESCO Sustainable Cities). 1 development assistance project.
5. <b>Manila, The Philippines</b>	13	11 private sector venture agreements for urban projects. 1 development research project (water pollution). 1 urban training project.
6. <b>Sao Paulo, Brazil</b>	13	11 private sector venture agreements for urban projects. 1 development assistance project (water). 1 university consortium (UNESCO Sustainable Cities).
7. <b>Hanoi, Vietnam</b>	12	5 private sector urban development projects. 4 university partnerships on urban issues. 2 development research projects. 1 multi-sectoral urban consortium (governance).
8. <b>Mexico City, Mexico</b>	12	7 private sector venture agreements for urban projects. 3 university partnerships (assessment, research). 1 development research projects (environmental policies). 1 development assistance project (youth in slums).
9. <b>Jakarta, Indonesia</b>	12	8 private sector venture agreements for urban projects.. 1 financial partnership for private sector urban development. 1 development research project (pollution, waste reduction). 2 university partnerships (research, training).

**CANADIAN ACTIVITIES IN URBAN REGIONS OF  
TRANSITIONAL AND DEVELOPING ECONOMIES (CONTINUED)**

URBAN REGION (TOP 22)	NO. OF PROJECTS	TYPES OF PROJECTS/RELATIONSHIPS
10. Tianjin, China	10	7 private sector urban ventures (in consortia and individual) 1 municipal capacity development project. 1 university partnership (water resources). 1 federal government department partnership (agriculture)
11. Beijing, China	10	5 university partnerships. 2 private sector urban projects. 1 research institute-private sector partnership. 1 development assistance project. 1 urban research institute project.
12. New Delhi, India	10	9 private sector venture agreements for urban projects.. 1 university partnership (research, linkages).
13. Mumbai, India (formerly Bombay)	10	5 private sector venture agreements for urban projects. 3 development assistance projects. 1 development research project (solid waste management). 1 private sector/municipal consortium (sewage).
14. Seoul, Korea	9	9 private sector venture agreements for urban projects.
15. Katowice, Poland	8	7 private sector urban development projects. 1 university consortium (UNESCO Sustainable Cities).
16. Dakar, Senegal	7	4 development assistance projects. 1 municipal partnership. 1 university partnership (water research). 1 university consortium (housing).
17. Dar es Salaam, Tanzania	7	4 urban research partnerships.. 1 development assistance project (housing). 1 urban research partnership. 1 university consortium (UNESCO Sustainable Cities).

**CANADIAN ACTIVITIES IN URBAN REGIONS OF  
TRANSITIONAL AND DEVELOPING ECONOMIES (CONTINUED)**

URBAN REGION (TOP 22)	NO. OF PROJECTS	TYPES OF PROJECTS/RELATIONSHIPS
18. Rio de Janeiro, Brazil	6	2 private sector venture agreements for urban projects. 2 university partnerships. 1 private sector development assistance project (energy). 1 urban training project.
19. Port-au-Prince, Haiti	6	4 urban development assistance projects. 1 university partnership (urban planning). 1 university consortium (training).
20. Shanghai, China	6	3 private sector venture agreements for urban projects.. 2 university research partnerships. 1 development research project (pollution control).
21. Cebu City, The Philippines	5	3 private sector venture agreements for urban projects. 1 municipal partnership. 1 major development assistance project (water management).
22. Lima, Peru	5	3 development assistance projects for urban issues. 1 development research project (housing). 1 urban planning project (World Bank funded).

In each case, the consultants checked the most authoritative available sources of information and data, including that offered in reports by International Financial Institutions. Their aim was to develop sound intelligence reports for consideration by Canadian governments, research institutes, non-governmental organizations, and companies. At the same time, they were seeking to gauge Canadian interest in a sustainable cities initiative and to assess ways in which such an initiative can be made more explicable and credible.

While all 22 cities in the above list have a definite need for concerted action on urban environmental issues, and many also meet at least some of the criteria listed above, a further 16 had to be regretfully excluded from the first round, for various reasons:

- Those in India were omitted because of larger international security considerations making inadvisable to start new Canadian initiatives there.
- Several cities in East Asia – Jakarta, Seoul, Bangkok, and others – had been hard hit by the current financial and economic crisis. While their environmental needs are no doubt even greater than before, both the likely distraction of their urban leadership and the potential lack of Canadian commercial interest to link with development assistance militated against them as starting cities. More groundwork would be needed in these cases.

- While Africa is an immensely important region for Canadian development assistance in particular, it appeared essential to have a very solid commercial focus for any city or region chosen there. This criterion excluded many of the candidates.
- The vast majority of the urban regions in the above list are capitals of their countries. While inclusion of some capitals was considered both necessary and desirable, many Canadian urban experts believe the best chances probably lie *outside of the capital cities* in several countries. Thus Beijing was not included, though higher on the list than Tianjin, a large city nearby which receives much less attention. Similar reasons similarly dropped Rio de Janeiro and Shanghai from the list. Some participants in developing the list believed that the selection of alternatives to capital cities should go even further, and proposed for example, Cordoba instead of Buenos Aires in Argentina, and a similar resort to substantial cities at the second tier of population in every country.
- While there are good Canadian linkages with many cities in the Caribbean, Port au Prince appears to be too challenging at the moment to attract much private sector interest. Development assistance projects could be coordinated more actively outside a formal Sustainable Cities Initiative.
- Among the cities of Latin America, there are many attractive candidates. A final selection of Santiago and Buenos Aires was based on comments from regional experts on the relative ease of doing business in them compared to others. It was clear that a substantial volume of relevant commercial interest was already operating within a "sustainable cities" theme, e.g., in offering energy-saving technology. While Buenos Aires is another highly competitive market for infrastructure projects, with a politically charged atmosphere, it seemed worth the risk because of the commitment of senior government officials to privatization and reform, and the evident interest of local people in what Canada has to offer.

On a positive note:

- The next comprehensive trade mission led by the Prime Minister of Canada was announced during the project, to Poland and Ukraine. Both for this reason, and because of long-term Canadian environmental, economic and cultural interests in this region, it appeared wise to have at least one from among these countries. Poland appeared to have progressed farthest toward market reforms and a favourable climate for private sector investment.

- Consultations with World Bank experts indicated strong interest in seeing Canada take a role in Hanoi, Vietnam, where Canada already has a very substantial urban environmental investment via CIDA.
- Active interest by Canadian companies or non-governmental organizations ready to play a leading role in starting city teams tipped in the direction of Accra, Katowice, and Tianjin. In each of these cases, it was clear that Canadian capabilities exist to meet the environmental needs.
- The Federation of Canadian Municipalities and individual Canadian urban centres have long-term experience working with cities around the world including some of the cities selected for greater attention as prospective "Sustainable Cities".

CITY	PROGRAM	CANADIAN TWIN CITY
Accra, Ghana	CIDA-funded partnership	St. John's
Hanoi, Vietnam	CIDA-funded partnership	Montreal
Santiago, Chile	Individual twinning	Ottawa
Tianjin, China	China Open Cities Project	No specific city

### **3. DOCUMENTING A PROPOSED "PORTFOLIO" OF STARTING CITIES**

A "Sustainable Cities Initiative" would seek to engage ongoing teams of experts, private sector companies, and government departments and agencies in integrated planning, environmental management and development work in selected urban-centred regions around the world. The aim would be to remain continuously engaged over a substantial period, perhaps up to 10 years.

Private sector companies, as well as individual units within government and individual urban experts have already expressed considerable interest in a "teaming" approach to analysis, marketing, financing, and project management in a variety of urban settings.

It is essential to capitalize on this interest and to ready to present to potential participants, information and advice on selected "priority cities". The aim is to permit timely verification of viability and interest by key stakeholders and to have cities ready to be "piloted", beginning in 1999.

The consultants were asked to cross-reference data from the "Map of Canadian Capabilities" described above with other information to support decisions regarding approximately 7-10 cities particularly ready for a coordinated and integrated "sustainable cities solutions" approach.

Methods of doing so were to include:

- correlating the environmental and economic priorities of selected cities and urban regions with existing capabilities and experience by means of transparent and replicable research methods;
- consulting with centres of urban expertise and others listed in the "Mapping Canadian Capabilities" document as to priority cities, environmental priorities, receptive city officials, etc.;
- ascertaining criteria applied by the World Bank, the United Nations, and regional development banks for selection of such cities and how these may relate to Canadian selection process;
- ascertaining environmental priorities on a regional and city-region basis, referring to factors such as per capita income, level of sanitation services, population health, etc., according to World Bank, World Resources Institute, regional development bank and other sources;

- determining potential Canadian company capabilities in consultation with Industry Canada, DFAIT, CIDA and other Federal government departments, industry associations, market analysis reports, etc.;
- gathering information as to which cities are committed to and capable of private-public partnerships or other major forms of development projects involving foreign participants, e.g., by having in place necessary legislation and financing mechanisms.

The aim was to assess which would be most promising among approximately 7-10 cities or regions resulting from an initial review.

## **4. SOURCES OF INFORMATION FOR CITY PROFILES**

### **4.1 "Anchor" Projects**

Potential "anchor" projects in each city were gleaned from a variety of sources including the following:

- Current and relevant World Bank contracts posted on the IFInet Website;
- Country profiles and market opportunities assembled by the Department of Foreign Affairs and International Trade;
- Reports from the Asian Development Bank on Asia's infrastructure market;
- Information from contacts in the private sector and various newsletters and country profiles;
- Studies prepared on market opportunities by Canadian consular offices.

### **4.2 Governance**

The issue of governance is central to a sustainable cities initiative for three main reasons:

- Much procurement for projects to improve the urban environment is still carried out by governments, whether national, provincial or local.
- The policy framework for most relationships between environment and urban development is set by government policies, or the lack of them.
- In cases where private sector financing and operation of urban services is contemplated or actively promoted, governments still set the standards to be met by such arrangements; through policies on such issues as charges for energy, water, solid waste removal, etc., they often determine the viability of such projects.

The four main information sources for "baseline" information on governance in candidate cities and regions included:

- the Export Development Corporation's country profiles and risk assessments;
- political and economic profiles on different countries and cities in those countries produced by non-governmental organizations, academics and political analysts;
- CIDA reports on different countries and country priorities for Canadian development assistance;
- Reports by Canadian urban experts specifically on the issue of governance.

With this baseline information in hand, the consultants conducted a set of strategic interviews with those who have regularly visited different candidate cities, designed to probe further a selected number of the most promising urban regions.

Since Chile ranks among the highest of any emerging or developing economy in terms of favourable operating conditions from the standpoint of corruption, etc., this interview process began with Santiago. Other cities in countries with solid governance arrangements in place at both national and municipal levels were also considered further in relation to scope of environmental need.

#### **4.3 Urban Environmental Need**

There are obviously huge unmet needs for environmental improvement in cities and urban regions around the world, including in Canada itself. The quality of environmental data on various global cities tends to reflect the attention paid by various international and non-governmental organizations to those cities rather than the actual extent of the need. In other words, the more attention given to these cities, the more comprehensive is our picture of the city's needs.

With these two caveats in mind, the main sources for data and information on urban environmental needs were:

- World Resources Institute data series on urban environmental need in countries around the world, prepared in conjunction with the World Bank and the United Nations;
- Industry Canada reports on urban opportunities for Canadian environmental industries, which are another way of indicating need;
- Habitat/UNDP/World Bank Urban Management Programme environmental profiles;

- Reports produced by non-governmental organizations active in each city.

In general, those places with the highest environmental need were placed highest on the list of prospective starting cities and regions. However, other aspects of the situation were also considered, such as strategic location within a larger cluster of countries affected by a common ecosystem, e.g., a shared sea or mountain cordillera, a shared river basin.

Other factors also came into play, such as common environmental problems arising from similar technologies, giving rise to one city as a prospective test-bed for solutions with much wider application.

#### **4.4 Canadian Capabilities**

The mapping process shows that Canada has an impressive array of over 500 possessors of relevant capabilities in relation to all aspects of urban environmental improvement, and over the whole life-cycle of urban environmental issues.

Nevertheless, capability is also a comparative matter, in relation to:

- what is offered by competitors and/or potential cooperants from other countries;
- capacity of individual regions and cities to pay for and to apply effectively what is offered by Canada;
- capacity of Canadian companies and organizations to find complementary organizations in other countries to deliver their products and services, to complement their offerings where they have gaps, etc.;
- whether Canadian capabilities would potentially fit within an integrated package, and indeed would contribute positively to a framework for integration.

There are few authoritative information sources on Canadian capabilities in relation to specific requirements of given markets, since most existing tools in this connection are geared to markets in developed countries of the G-7. This aspect of the project therefore relied primarily on:

- CIDA reports on organizations and projects of sustainable development in urban environments;
- Industry Canada reports on Canadian companies interested in responding to global infrastructure opportunities;

- direct contacts with Canadian companies interested in the target regions, e.g., at trade shows, through Internet contacts, and through self-descriptions in company directories.

The aim in setting out the most appropriate Canadian capabilities was:

- to focus on urban pollution prevention and other solutions which are patently attractive from a financial perspective, e.g., urban mass transit, urban energy efficiency technologies, telecommunications solutions, etc.;
- to avoid "technology push" solutions;
- to focus on solutions which help to position Canada as a centre of urban innovation.

In no case was there an attempt to exclude given Canadian solutions: they can simply be annotated in relation to what the urban region in question appears to have as priority needs, and also a prognosis by local experts on the viability of the solution. An overall map of the "goodness of fit" of various capabilities would be the result. The real test, of course, would be readiness in the various markets selected to pay for Canadian offerings.

#### **4.5 Financing**

Both funding (i.e., grants and coverage of soft costs such as community organization and planning) and loan financing or investment in capital projects are essential to building sustainable cities. Various sources and methods of financing can support companies exporting or investing in energy, transportation, telecommunications, water supply, sewage collection and treatment, institutional commercial and industrial buildings and housing.

In some cases, International Financial Institutions may also be prepared to support the "soft" side of urban sustainability through lending for services to strengthen institutions, develop and deliver community services to the poor, or establish new governance and regulatory frameworks.

The following were included in the scope of work on financing:

- Private sector financing sources and methods of risk-hedging, as well as methods of securing revenues from savings;
- Canadian government financing agencies, focusing on both development assistance and repayable loan or equity financing, as well as risk insurance;

- International Financial Institutions, focusing on urban infrastructure and opportunities for private sector financing.

In each case, the consultants commented on the apparent accessibility and relevance of the funding for sustainable cities projects and programs from a Canadian perspective.

Principal information sources included:

- Websites of the various financial institutions;
- DFAIT and Industry Canada studies of international project financing;
- Direct interviews with key potential sources of financing, beginning with those taking part in NRTEE advisory processes on financing sustainable cities.

Since the list of "starting" cities and regions was rather short by this stage, it was feasible to link financing to Canadian capabilities to needs and governance instruments in some detail for each of those selected, e.g., looking at specific legislation to help underwrite local risks, and at specific IFI lending projects planned for the region or city in question.

#### **4.6 Synthesis and Intuition**

Many quantitative factors and substantial hard intelligence were brought into play in ordering and selecting starting cities and regions. However, the final selections also involved considerations arising from the interaction of the factors described above. The aim was to find an "elegant mix" of different elements holding out the prospect of early and sustainable success.

In addition, it was important to have a mix of individual cities and regions which compose a "portfolio" as a whole, with some calling for more stress on the governance and capacity-building aspects of sustainable cities solutions while others call for immediate commercial response, etc.

The aim was to have a sufficiently diverse array of regions, sizes of centre, environmental issues, Canadian team composition, financing arrangements, etc., that the results would be useful for future planning and action along these lines in a variety of different regions of the world, cultural settings, and markets.

## 5. POTENTIAL INITIAL PORTFOLIO OF SUSTAINABLE CITIES INITIATIVES

Consideration of the above sets of information and data in detail appeared to confirm most of the original selections of starting points, and resulted in the following "portfolio" of six starting cities and regions from a Canadian perspective:

- *Accra, Ghana*, in which active Canadian interest is combined with comparatively lower risk than in much of the rest of Africa, and a major World Bank port redevelopment project just getting underway;
- *Buenos Aires, Argentina*, in which major investment in urban transit, water, and sewage treatment facilities is combined with extensive Canadian contacts and solid local interest in what Canada has to offer, flowing from a 1998 Team Canada mission led by the Prime Minister of Canada;
- *Hanoi, Vietnam*, in which substantial Canadian investment in development assistance projects by the Canadian International Development Agency (CIDA) is coupled with World Bank interest, the development of two new cities by major foreign companies, and long-standing Canadian connections;
- *Katowice, Poland*, in which a consortium of Canadian organizations led by the International Centre for Sustainable Cities has been active in solid waste management issues, urban region governance, and alternative urban technologies for a number of years;
- *Santiago, Chile*, in which vital Canadian economic interests via a Canada-Chile Free Trade Agreement and a Team Canada mission in 1998 are combined with activities led by the Toronto-based International Council for Local Environment Initiatives, and growing local interest in Canadian environmental and housing technologies;
- *Tianjin, People's Republic of China*, in which Canadian organizations and companies have been active for some time in municipal capacity-building, urban and regional planning, and urban transit system development.

This initial list was chosen with an eye to rapid action, based on evident willingness on the part of one or more organizations already engaged to take a leading role in getting a team together. The list was also weighted heavily in favour of the potential to assemble a more comprehensive project from among current capabilities and areas of involvement in order to address emerging opportunities. In several cases as well, the locality chosen is considered "investment grade" by private sector financial institutions.

Key features of this portfolio are set out in the table below, with particular emphasis on opportunities for liaison and synergy between potential Canadian teams and the efforts of International Financial Institutions.

**AN INITIAL PORTFOLIO OF SUSTAINABLE CITIES FOR  
A CANADIAN "TEAMING" INITIATIVE**

CITY/REGION	ANCHOR	INITIATOR	INITIAL FOCUS
Accra, Ghana	World Bank Ghana Trade and Investment Gateway project	Consulting engineering company from Manitoba	Customs reform; infrastructure for port access; site services to nearby settlements
Buenos Aires, Argentina	Need for sewage treatment and water facilities; privatization of major public facilities with World Bank and IADB involvement	Match-making company in environmental technologies from Ontario	Supply of urban transit equipment; wastewater treatment ventures
Hanoi, Vietnam	Expansion of electric power generation facilities; development of new towns in Hanoi region by Daewoo and Bechtel; World Bank and AsDB support for urban infrastructure upgrading	Urban planning consultants from Quebec	Energy conservation; alternative energy supply; innovations in urban infrastructure for new cities
Katowice, Poland	Alternatives to coal-fired energy generation; East European market for environmental technologies, with EBRD involvement	Canadian non-governmental organization based in British Columbia with environmental engineering firm from Alberta	Getting off coal-fired energy; integrated solid waste management; urban transit upgrading
Santiago, Chile	Ventures to transfer and produce environmental technologies; market for light building technologies; institutional strengthening of municipal governments	International non-governmental organization based in Ontario	Turning pilot projects into full-scale operations; technology transfer and training
Tianjin, China	Investment in port-related urban renovation and infrastructure upgrading	Urban planning consulting firms based in Ontario and British Columbia	Linking infrastructure development to private sector financing; urban transport alternatives

**PART B: INITIAL "PORTFOLIO" OF STARTING CITIES**

**National Round Table on the Environment and the Economy (NRTEE)**

**PROSPECTUS FOR A  
CANADIAN SUSTAINABLE CITIES INITIATIVE IN  
ACCRA, GHANA<sup>1</sup>**

**SUMMARY**

The Accra region offers an excellent opportunity to link Canadian expertise in providing development-oriented site services to new and existing settlements with lucrative private investment in a major port upgrading project. This port upgrading project is designed to make Accra a better gateway to the whole country and to attract industrial ventures. It will take place at Tema, 32 kilometres from the centre of the city. Major risks will be borne in its initial stages by the World Bank. The port upgrading project itself is multi-faceted, with major potential roles for Canadian Federal government departments such as Transport Canada and Revenue Canada as well as private sector financing, consulting engineering and construction services.

Looking at the urban region from a wider perspective, it is poised on the brink of becoming a major economic player for the whole of West Africa, based on a government which wishes to make Ghana a positive place in which to invest. The country is a comparatively safe one in which to operate, and Canadian businesses with long experience there rate it highly. Current Canadian engagement with the Ghanaian economy is not large in global terms, but exports have doubled over the past five years, and contain significant amounts of infrastructure, construction and industrial equipment. Canadian development assistance efforts have already laid a solid foundation for future work combining investment in improved site services with institutional strengthening.

**SUCCESS FACTORS**

**1. Basic Information**

Accra is both the administrative and commercial centre of Ghana. The city is linked through a major road network to the North, East, West and Volta Regions. Its population of 1.8 million is growing at a rate of 4%, and occupies around 2% of Ghana's total area. With about one-third of its population urbanized, Ghana has a substantially smaller portion of its national economy in non-agricultural sectors than other countries with similar income and urbanization levels.

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<sup>1</sup> This prospectus was prepared for the National Round Table on the Environment and the Economy (NRTEE) by Cynthia Taha of The Bayswater Consulting Group, Inc with support from Lisa Van Buren., in consultation with Alan Foy of Wardrop Engineering Inc. It reflects comments from Mark Baron of Cowater International Inc., and Rhonda Gossen and Bohdana Dutka of the Canadian International Development Agency. It also draws on key information developed by the Ghana country team of the World Bank. David Crenna and David Morgan edited the document. Any errors or omissions are the sole responsibility of The Bayswater Consulting Group Inc.

Following the introduction of IMF-supported economic reforms, the Ghanaian economy underwent tremendous change. The economy was liberalized and the private sector given priority. This resulted in the inflow of foreign capital and sustainable economic growth. The latter averaged 5% over the past decade.

About half of Ghana's total GDP is in the largely urban-based sectors of industry and services which are the most dynamic contributors to the economy. Accra's economy contributes between 15 and 20 per cent of the country's GDP, and accounts for 10 per cent of employment in Ghana. Its economic base lies in manufacturing, construction, trade, transportation, communications, finance, insurance, and real estate.

## **2. Governance**

According to a Canadian company executive with 25 years experience working in Ghana, "it is one of the best West African countries to be in". He says this for a number of good reasons. It has a relatively stable political environment, and a government that is reform oriented and open to public dialogue, despite the fact that Transparency International does not include it on its corruption perception index.

The government's decentralization program begun in 1992 has been important to urban development. The 110 District Assemblies now have the authority for planning, economic management, administration, and political decision-making. They are also responsible for providing basic services and local infrastructure.

As well, urban environmental issues have fuelled public debate in Accra for nearly a decade. Local government agencies are actively involved in these debates. In mid-1995, a city held a consultation on a Sustainable Cities Program. The week-long city consultation ended with over 150 stakeholders agreeing on priority issues for action plan development.

## **3. Need**

In the late 1950s, the Town and Country Planning Division of the Ministry of Housing created a plan to improve Accra's living conditions. Despite these efforts, Accra's lack of professional planning and planning control resulted in a chaotic urban development process. Moreover, inadequate infrastructure development undermined efforts at waste management and pollution control in Ghana's urban communities.

The Habitat/UNDP/World Bank Urban Management Programme prepared an environmental profile of Accra. The profile identified the cities priority issues as: solid waste management, liquid waste management, drainage; pollution of Korle Lagoon; disarray in institutional arrangements; and enforcement of regulations and laws.

The government's efforts to target environmental needs began with a ten year (1991-2000) Environmental Action Plan (EAP). The plan includes urbanization as one of four main areas for intervention.

The EAP calls for urban waste management and sanitation projects; the improvement of drainage in coastal cities; the establishment and implementation of environmental and health standards; and the adoption of effective land use control mechanisms.

Preventive design measures are needed to deal with Accra's natural environmental hazards which include erosion, flooding, earthquakes and soil instability, and a rise in sea-level. A comprehensive intervention program is needed to deal with the man-made hazards of indiscriminate disposal of human excreta, deforestation, noise pollution, and the lack of waste management systems.

#### **4. Financing**

##### **4.1 Ghanaian Public-Private Investment Legislation**

President Jerry Rawlings turned his back on socialism in the 1980s and initiated transformations making Ghana into an early model for structural adjustment programs urged by international lenders. Ghana's government has introduced market-oriented pricing, liberalization of interest, and exchange rates and repayment mechanisms. Its long-term development program, "Vision 2020" promotes foreign capital investment by lowering the cost of doing business in Ghana and providing infrastructure services of international quality to investors.

International economic conditions have improved since the Rawlings' Government began to implement economic reform in the 1980s. Ghana will continue to receive generous economic aid, and private foreign investment will grow. Debt repayment will be negotiated with foreign lenders, and the country's foreign credit standing will continue to be satisfactory.

Efforts to increase own source local government revenues in recent years have centred on the revaluation of property rates and the collection of property taxes. These measures have produced some gains, but their sustainability is subject to the ability of local governments to become more responsive and accountable for the provision of services. Local revenue collection remains below its potential.

##### **4.2 International Financing**

Foreign assistance agencies are supporting capital investments in urban infrastructure and technical assistance for urban planning and management in Ghana. The bulk of the external capital funding is currently going into urban roads and water supply. Urban sanitation, drainage and area upgrading have received very limited funding.

The International Development Association (IDA) is the major financing agency in the urban roads sector through the Urban II Project and the Urban Transport (UTP) and Local Government Development (LGDP) Projects. IDA and the African Development Bank (AfDB), and several bilateral projects are assisting in water supply. The German Kreditanstalt für Weideraufbau (KfW) and Gesellschaft für Technische Zusammenarbeit (GTZ) are supporting a project, begun in 1985 and continuing, to strengthen the Accra Waste Management Department.

The IDA-supported Urban II Project is also rehabilitating the waterborne sewage system in the central part of Accra. The limited system has very few properties connected to it and has fallen into disrepair.

The UNDP and UNCHS both actively support technical assistance for urban activities in Ghana. The Sustainable Cities Programme (SCP) is a capacity building programme established in the early 1990s. The Sustainable Accra Programme is funded and supported under this program. For Accra, the program identified the priority issues as sanitation, including solid waste management, liquid waste management, pollution of Korle Lagoon, institutional capacity building, and enforcement of regulations.

The World Bank provided support for urban development in Ghana through several operations since 1985. In 1995 and 1996, the World Bank initiated a project in the amount of US\$71.0 million on Urban Environmental Sanitation in Ghana that includes Accra. Bank assistance has focused on the rehabilitation of urban infrastructure and services (roads, water supply, sewerage and sanitation, drainage, solid waste, markets, public transport, traffic management, and area upgrading) and on institutional strengthening at the central and municipal levels, especially in cost recovery and revenue mobilization.

The Bank has also approved a US\$50 million credit for the Ghana Trade and Investment Gateway Project. The project seeks to increase the competitiveness of Ghanaian products in the global market through the reform of the legislative, regulatory, and incentive systems; institutional strengthening and capacity building; development of private participation in infrastructure; and country promotion and consensus building. The project also addresses the issue of inadequate infrastructure by supporting the development of Free Trade Zones.

The World Bank regards this project as an important contribution towards the encouragement of further outward-oriented foreign investment in Ghana. In particular, the privately-financed free trade zone will hopefully pave the way for a significant growth in labour-intensive export industries.

Economic indicators show Ghana continuing to improve as a target for foreign direct investment, the amount of which more than doubled between 1993 and 1997.

INTERNATIONAL ECONOMIC INDICATORS	1993	1994	1995	1996	1997
Foreign Direct Investment (\$bn)	0.13	0.23	0.25	0.29	0.31
Foreign Exchange Reserves (\$bn)	0.39	0.55	0.67	0.80	0.78
Total Foreign Debt (\$bn)	3.36	5.15	5.90	6.00	6.40
Total Foreign Debt/GDP (%)	59.4	99.6	95.5	75.0	70.3
Debt Service Ratio (%)	35.7	27.4	23.0	24.3	22.3
Current Account (\$bn)	-0.56	-0.26	-0.18	-0.26	-0.30

INTERNATIONAL ECONOMIC INDICATORS	1993	1994	1995	1996	1997
Current Account/GDP (%)	-9.9	-5.0	-2.9	-3.3	-3.3
Exports (\$bn)	1.06	1.23	1.50	1.53	1.61
Imports (\$bn)	1.73	1.58	1.70	1.84	1.96
Foreign Trade Balance (\$bn)	-0.67	-0.35	-0.20	-0.31	-0.35
Currency Exchange Rate	649.06	956.71	1200.43	1637.23	1895.01
Currency Change (%)	-48.5	-47.4	-25.5	-36.4	-15.7

Source: *Country Forecasts, Ghana*. The Political Risk Services Group. January 1998.

### GDP PER CAPITA FOR GHANA

ECONOMIC INDICATOR	1993	1994	1995	1996	1997
GDP (\$bn)	5.66	5.17	6.18	8.00	9.11
Per Capita GDP (\$)	345	305	355	445	490
Real Growth Rate (%)	4.9	3.8	4.5	5.2	5.5

Source: *Country Forecasts, Ghana*. The Political Risk Services Group. January 1998.

## 5. Managing Risks

### 5.1 Overview

Ghana experienced an inflow of foreign capital in recent years as the government has prioritized the private sector and liberalized the economy. The introduction of wide-ranging and internationally lauded IMF-supported reforms bolstered aid efforts to Ghana, which was pledged US\$1.6 billion by donors in November 1997. Medium to long-term prospects are dependent on cocoa output, world commodity prices and continuing aid flows. Ghana is currently not rated by Moody's or Standard and Poor's.<sup>2</sup>

### 5.2 Political Risks

President Jerry Rawlings was re-elected in 1996 with 57% of the vote. As there is now a real parliamentary opposition, it is expected the government will be more accountable. The peaceful conclusion of Ghana's national elections augurs well for continued political stability and reform-oriented economic policies. As long as President Rawlings enjoys the support of the military, his rule will not be threatened.

<sup>2</sup> Economic Development Corporation, *Guide to Country Risks and Opportunities*, March 1998, pp. 60-61.

Despite tensions caused by the poorly developed economy and by Ghana's ethnic diversity, turmoil will remain moderate. Rawlings' political skills and his close ties with the military and the tribal chiefs will assist him in minimizing turmoil and containing the threat of a military coup.

### 5.3 *Economic and Financial Risks*

Though the Ghanaian government maintains its interest in introducing more market mechanisms into the economy, it may be frustrated by the heavy external debt and inadequate private foreign investment. As a result, economic growth will be limited and inflation is likely to rise.

High levels of government expenditure, the subsequent increase in the money supply and poor harvests triggered high inflation rates that averaged 50% in 1995 and 1996. Despite the authorities' targeted 15% inflation rate, in 1997 it was in the 20 - 25% range.

The government adopted a less expansionary stance in the aftermath of the 1996 elections, but spending will increase again as the December 2000 elections approach. Growth will be helped by economic reforms such as accelerated privatization of the para-statal, expansion of the private sector, and an easing of government controls.

Inflation will remain a problem as the economy continues to depend on volatile earnings from commodity exports and on agricultural production. Weakness in the terms of trade for cocoa and gold may hamper progress. Improvement in living standards will be thwarted by the country's high rate of population growth.<sup>3</sup>

While formal policy mechanisms to collect user charges for urban services are being put in place, there are still some risks associated with actually collecting them.

### 5.4 *Operational Risks*

In order to comply with Ghanaian law, currency transactions must be conducted with banks or foreign exchange bureaus.

Based on project experience, the World Bank recommends that attention be given early in the preparation phase to institutional development and capacity-building. This is crucial to the sustainability of a project's benefits. The institutions' ability and motivation to mobilize funds for operation and maintenance, through user fees and general revenues, is an important determinant of the scale of new investments. The willingness/ability to pay of prospective beneficiaries also needs to be taken into account in project design.

Canadian business leaders with extensive in-country experience rank Ghana and Accra as among the best places to work in Africa. For example, muggings are not reported to be a problem in Accra. The main personal security issue is pick-pockets.

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<sup>3</sup> *Country Forecasts, Ghana*, pp. 131-134.

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A good, fairly recent source of information on international business risks in the country with useful statistics and basic data on the government, economy and social indicators.

Dogbevi, Emmanuel, "Building a Sustainable Environment" in the *Ghanian Independent*, October 31, 1997.

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This guide is what it says it is: a sketch of Ghana with some travel advisories and a detailed map of Accra.

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Yound, Margaret Walsh and Susan L. Stetler, eds., *Cities of the World, Africa*, 3rd Ed., Vol. 1, Detroit, Michigan: Gale Research Company Book Tower, 1987, pp. 267-279.

The book touches on Accra providing some basic information on the city's history. Much of it is very general, however, focusing more on the country than the city.

*The Urban Environment*, A special reprint from World Resources, 1996-97, The World Resources Institute, The United Nations Environment Programme, The United Nations Development Programme, The World Bank, New York, Oxford: Oxford University Press, 1996, p. 150.

A good source of urban environment information and indicators, as well as appendices of city and country statistics such as populations.

**PROSPECTUS FOR A  
CANADIAN SUSTAINABLE CITIES INITIATIVE IN  
BUENOS AIRES, ARGENTINA<sup>1</sup>**

**SUMMARY**

Buenos Aires is one of the largest urban regions in the world. The City of Buenos Aires is an autonomous district -- much like Washington D.C. or Mexico City -- located within the Province of Buenos Aires, but politically independent. The City's political status is equivalent to that of a province, and its administration wields significant authority in national issues because of this. Canadian company executives familiar with the local situation find the City much easier to work with than other authorities and believe that it offers a comparatively straight forward approach to contracts and other business dealings.

The municipal government has plans to spend US\$2.8 billion over the next 6 to 8 years on water, sewer systems, environmental products and technological assistance. Most investment is expected to come via privatization of municipal water and wastewater services, a trend which is leading to much greater investments, and an increasing demand for foreign environmental equipment and services.

In the Gran Buenos Aires area, the World Bank will provide technical assistance and finance investments in the amount of US\$5.3 million for air quality and noise monitoring, a vehicle certification laboratory and technical centre, the preparation of an air quality management plan, and the strengthening of the vehicle inspection and maintenance program.

The main Canadian opportunities appear to exist in promoting small-scale water, sewage treatment and energy services which pay for themselves quickly and thus embody lower risks than do larger systems. Some opportunities also exist to supply to major players from other countries engaged in transit and large-scale infrastructure development projects. In addition, the Argentine market for housing is growing rapidly and acceptance of Canadian wood-frame technology as an alternative to solid masonry construction appears to be increasing somewhat.

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<sup>1</sup> This prospectus was prepared for the National Round Table on the Environment and the Economy (NRTEE) by Cynthia Taha and Lisa Van Buren of The Bayswater Consulting Group, Inc. based on extensive information from the World Bank and from the Department of Foreign Affairs and International Trade, as well as other sources. Michael Cohen, then adviser to the Vice President of Environmentally Sustainable Development at the World Bank encouraged a close look at the potential of Buenos Aires. Tim Egan of the CONTACTO Group provided extensive constructive comments and suggestions, as did his colleague, Francisco. In addition, Nolberto Munier, principal of TEAMIC International Inc. offered a copy of a major report which included environmental needs of Buenos Aires. He also encouraged consideration of this urban region. David Crenna and David Morgan edited the document. Any errors or omissions are the sole responsibility of The Bayswater Consulting Group Inc.

## **SUCCESS FACTORS**

### **1. Basic Information**

Argentina is one of the most urbanized in Latin America with the unique characteristic that urbanization was well advanced before World War I. In 1991, 87 percent of the total population lived in urban areas. Despite its high level of urbanization, Argentina is still experiencing significant growth in its urban population.

Buenos Aires, the capital of Argentina, is located on the Rio de la Plata, 100 miles from the Atlantic Ocean. The city is situated on the eastern edge of Argentina's most productive agricultural area, the Pampa. As one of the busiest port cities in the world, virtually all activity in the country is centred on Buenos Aires. It is also a trade and distribution outlet for a huge area. An inland system links it with Paraguay, Uruguay and Brazil.

Greater metropolitan Buenos Aires has an estimated population of 9,677,000, making it the sixth largest in the world and the third largest in the Western Hemisphere. It has more Spanish-speaking people than any other city in the world. Approximately 13 million live in the Province of Buenos Aires, which is roughly equal to that of Chile, but in an area about the size of Italy.

The economy of Buenos Aires City rests on its position as a port city and centre for trade and industry. Major industries in the region include food processing, automobile manufacturing, oil refining, metal-working, printing and publishing, and machine building. In addition, the city boasts industries in the production of chemicals, textiles, clothing, paper, and tobacco products. Exports are primarily in linseed oil, meat, meat products, dairy products, grain, wool, flax, and hides.

Argentina is the second largest country in South America, after Brazil. It is unique in contrast to other Latin American countries. Some 97 percent of its population is Caucasian, dominated by those of Spanish and Italian ancestry. When the first Spanish colonialists established a colony in 1536 on the site of what is now Buenos Aires, few native peoples lived in the area. There has been less genealogical assimilation of native peoples than in other parts of Latin America. In the early part of the 20th century, large scale immigration from Europe promoted modernization in the area and brought economic and cultural status to Argentina.

### **2. Governance**

Argentina has a federal system of government with three levels: central, provincial and municipal. Each Province is an autonomous entity governed by its own constitution, which also provides the basic framework for its municipal governments. Specific responsibilities for service provision and sources of revenue are set out under the province's Municipal Code. Provincial and municipal governments share responsibility for elementary and secondary education, health care, water and sewerage, regional and local roads, and fire control. Municipal governments are predominantly responsible for solid waste collection and disposal, local streets and drainage, parks, markets, cemeteries, and land use planning and control. In recent years, Argentina has pursued a policy of decentralization of services thereby increasing municipalities' responsibilities if they can provide them more efficiently.

Under the leadership of President Carlos Menem, Argentina is engaged in a process of economic reform in an effort to stimulate growth and reduce unemployment. Mr. Menem introduced economic austerity measures which significantly damaged his popularity. Although traditionally strong supporters of Menem's party, the labour unions were alienated by labour reforms. Through corporate restructuring, the government sought to increase labour flexibility and reduce overall labour costs. These reforms and others are expected to bring down the unemployment rate and improve economic growth.

Democracy is now firmly established in Argentina. The military has effectively been removed from politics. Moreover, there is a growing national commitment to the development of civil society.

Levels of education are high, and as the economic situation continues to improve the educated populace has greater liberty to focus its attention on developing the range of organizations that make a democracy more effective. Developing "civil society" has received particular priority in the City of Buenos Aires as the political, economic and cultural hub of the country.

Corruption is considered to be a problem in the Province of Buenos Aires, but this situation apparently does not extend to the City, which is reported to be remarkably free of corruption by observers. Moreover, the status of municipal politicians in the City is high. In fact, the current mayor of the City, Fernando de la Rúa, is the likely presidential candidate for the Alianza - the principal opposition to President Menem's Peronist administration. The country as a whole rated poorly on Transparency international's 1998 corruption index. There is, however, increasing attention being paid to efforts to root out political corruption, which has become a major issue in the national political campaign of the Alianza party.

### 3. Need

Urban agglomerations in Argentina have considerable unmet needs for municipal infrastructure. There is a higher absolute need in the three largest provinces (Buenos Aires, Santa Fe, and Córdoba), which have a higher concentration of households. The World Bank estimated potential demand based on a survey asking 70 municipalities to identify infrastructure needs or subprojects. The results for the Province of Buenos Aires were as follows:

**Percentage of Households with Residential Site Services (1988)**

Urban Centre	Street Paving	Water Mains	Sewage Mains	Street Lighting	Average
Gran Bahia Blanca	73.9	97.3	78.7	91.1	85.3
Gran La Plata	59.9	85.9	65.0	89.2	75.0
Average	57.3	90.9	54.6	90.5	73.3

Source: *Situación y Evolución Social, Síntesis, Número 2*, INDEC, 1993.

After years of neglect and the least developed environmental protection regime in the region, Argentina is giving greater attention to environmental considerations. Since Buenos Aires is Argentina's largest industrial region and has the most developed environmental regime, it also has the greatest number of opportunities. The fact remains that while provinces such as Buenos Aires and other have strongly worded environmental laws, enforcement of those laws is minimal.

Environmental protection therefore continues to be a low priority, and the likelihood of it increasing via greater enforcement is not high. The opportunity will come through demonstration of cost savings that the environmental technologies can bring, and the pressures of the international market place to have goods and services of a particular environmental standard. It is the combination of the possibility of lower production costs (or cleanup costs), and the threats of international competition, that is driving environmental reform in industry in the country.

Air pollution problems are concentrated in Argentina's largest cities and industrial areas including Buenos Aires. Aside from a lack of significant emission controls on factories and power plants, a significant increase in the number of automobiles is a major cause of rising levels of urban air pollution. Trips by car in the Buenos Aires Metropolitan Area have increased from 2.7 million trips per day in 1970 to 4.5 million per day in 1991, a 60 percent increase. The sharp increase in traffic has also led to worsening noise pollution, traffic congestion, and an increasing number of traffic accidents.<sup>2</sup>

Demand for air pollution control equipment is concentrated in the electric power, industrial and transportation sectors. The government has also given high priority to the rebuilding of transportation infrastructure to address traffic and pollution problems.

Buenos Aires has the highest degree of water pollution in the country. In particular, industries such as tanneries, paper and pulp production, textiles, footwear, metallurgy, chemistry, oil refineries, and sugar and alcohol production are responsible for much of the water pollution.

According to the World Bank, ground water pollution is Argentina's worst pollution dilemma, followed by air pollution. It is estimated that as much as 30 percent of the population of Buenos Aires drinks contaminated water. The World Bank calculates that Argentina must invest over US\$13 billion to reach water supply and treatment targets set for the year 2000, which include connecting 80 percent of the population to safe drinking water and 90 percent to drainage facilities.

Argentina's construction industry continues to recover from the economic recession in 1995. For 1998 to 1999, analysts predicted the construction industry would grow at a rate of 15%. The building or restoration of homes occupies almost half of Argentina's construction industry.

Traditional building methods of cement and masonry are becoming too expensive and time consuming. Argentine construction firms are looking for more efficient and cost-effective methods to meet rising housing demand. Suppliers should bear in mind that price and financing is the key to success in the Argentine market.

There is also a need to expand telecommunications services, particularly with plans to deregulate Argentina's newly privatized telecommunications market by the year 2000. There are now approximately 12,000 public telephones and an extensive modern system but many families do not have telephones. Despite extensive use of microwave radio relay, the telephone system frequently grounds out during rainstorms, even in Buenos Aires.

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<sup>2</sup> World Bank, Infrastructure and Urban Development Division, *Staff Appraisal Report: Argentina, Buenos Aires Urban Transport Project*, April 11, 1997, p. 1.

## 4. Financing

### 4.1 *Private Financing*

With recent efforts to privatize companies in Argentina, numerous infrastructure projects are in the works. These projects are financed both by concession as well as some public sector funds from privatization of state operations. Nevertheless, financing remains the most prominent constraint on Canadian involvement.

According to the Canadian Department of Foreign Affairs, infrastructure developments are quite costly and interested companies cannot count on the Argentine government to provide funding for projects. Limited financing is provided by international financial institutions, including the World Bank and the Inter-American Development Bank. The bulk of projects are awarded as concessions, which require companies to secure long-term financing.

Fortunately, the government is working to smooth the path for foreign direct investment. Changes in Argentina's economic structure mean improved access to financing and stable prices. Foreign companies may invest in Argentina on the same terms as Argentine firms, without prior government approval. Moreover, there are no restrictions on the movement of funds in and out of the country.

### 4.2 *State financing*

The government has also given high priority to certain projects such as rebuilding the transportation infrastructure. To aid development, some of the money raised from the sale of state-owned enterprises is reserved especially for this sector. Companies are still primarily responsible for financing arrangements.

In Argentina, the FONAVI, (Fondo Nacional de la Vivienda- National Housing Fund) mortgage loans are the only way for the low-income segment to qualify to own a family home. The FONAVI is an Agency within the Secretariat of Social Development. The price of houses ranges from \$ 20,000 to \$ 30,000 for the standard design of 50 to 70 square metres. To qualify for a loan, the monthly income of the entire family group must range from \$ 500 to \$ 1,000. The family assigns twenty-five percent of its total income to monthly repayment instalments. Terms are up to twenty-five years (300 months). Individual loans for house construction are also available.

### 4.3 *International Financing*

The key items identified by the World Bank for its urban policy agenda in Argentina include: improving the urban environment, poverty reduction, economic growth and increased efficiency of infrastructure services.

In line with these priorities, the World Bank initiated a series of operations aimed at municipal development including a project in 1995 to assist Argentina in extending its fiscal and administrative reforms at the national level to the municipal public sector. The loan, in the amount of US\$210 million, would help over 900 municipalities improve their efficiency and fiscal discipline. In 1997, the Bank established financing in the amount of US\$200 million for the urban transport sector in Buenos Aires.

The project's objectives are to (a) support the private-public partnership in improving the service quality and coverage of mass transit; (b) support the infrastructure improvements defined in the concession agreement between the Government and the private sector; (c) assist in improving the conditions of traffic safety and environmental quality; and (d) help in developing an integrated urban transport (road and rail) system for the Metropolitan Area.

World Bank financing totalling US\$18 million will be made available starting in 1998 to improve the Government's performance and institutional capacity to provide key environmental services. There are four components to the project including (a) public-private partnerships for pollution management; (b) integrated management of environmental quality in the municipalities of Campana and Zárate (Buenos Aires Province); (c) air quality and noise management in Gran Buenos Aires; and (d) municipal and regional pollution management in the municipality of Puerto Madryn (Chubut Province) and the Patagonia region.

The International Finance Corporation has made significant contributions to the development of Argentina's infrastructure. By 1996, the IFC's Board had approved US\$562 million to finance twenty-nine projects costing US\$5.6 billion in total. These projects have covered power transmission and distribution, telecoms, railroads, gas distribution, ports, water, and a toll road. The IFC also supported wastewater treatment projects in Argentina, Brazil and Mexico. The IFC has favoured Argentina because of the political sustainability of its PPI program. The government has had the institutional capacity to implement new regulatory regimes and to use various mechanisms to promote PPI and competition, such as concessions. Moreover, it has been willing to accept foreign investment in politically sensitive infrastructure sectors.

The Inter-American Development Bank has helped finance two major infrastructure projects in recent years including the Buenos Aires Municipal Institutional Reform and the Argentina GIS Applications with Highways project.

#### 4.4 *Export Development Corporation*

Some financing is available from the Export Development Corporation (EDC). The EDC provided C\$382 million in financing in 1996 to Canadian firms conducting business in Argentina. There is strong support for the telecommunications sector in Argentina. In addition to several major banks, the EDC also holds lines of credit with Stet-France Telecom S.A. and Telefonica de Argentina S.A.

#### 4.5 *Debt Repayment Prospects*

Economic indicators show Argentina continuing to improve as a target for foreign direct investment. Increasing foreign exchange reserves between 1993 and 1997 have helped Argentina maintain a positive trade balance in recent years.

INTERNATIONAL ECONOMIC INDICATORS	1993	1994	1995	1996	1997
Foreign Direct Investment (\$bn)	3.48	0.60	1.32	1.32	?
Foreign Exchange Reserves (\$bn)	13.34	13.76	13.75	15.20	?
Total Foreign Debt (\$bn)	76.2	88.1	99.0	101.0	?
Total Foreign Debt/GDP (%)	29.6	31.3	35.3	34.7	?

INTERNATIONAL ECONOMIC INDICATORS	1993	1994	1995	1996	1997
Debt Service Ratio (%)	36.8	28.3	36.1	34.7	?
Current Account (\$bn)	-7.05	-9.36	-2.39	-4.10	?
Current Account/GDP (%)	-2.7	-3.3	-0.9	-1.4	?
Exports (\$bn)	13.12	15.84	20.96	22.40	?
Imports (\$bn)	15.54	20.08	18.73	21.20	?
Foreign Trade Balance (\$bn)	-2.42	-4.24	2.23	1.20	?
Currency Exchange Rate (per U.S. dollar)	0.998	0.999	0.999	0.999	?
Currency Change (%)	-0.8	0.0	0.1	0.0	?

Source: *Country Forecasts, Argentina*. The Political Risk Services Group, July 1997.

### GDP PER CAPITA FOR ARGENTINA

ECONOMIC INDICATOR	1993	1994	1995	1996	1997
GDP (\$bn)	257.84	281.92	280.07	291.36	NA
Per Capita GDP (\$)	7,615	8,215	8,055	8,275	NA
Real Growth Rate (%)	6.0	7.4	-4.6	4.0	7.0

Source: *Country Forecasts, Argentina*. The Political Risk Services Group, July 1997.

## 5. Managing Risks

### 5.1 Overview

Argentina is projected to be one of the lowest investment risks of the ten largest emerging markets in the world. In 1998, Standard and Poor's DRI ranked Argentina just below number one ranked Poland on the basis of more than 50 variables including governmental policies, economic trends, domestic political and economic risk factors.<sup>3</sup> Over the medium term, analysts expect the export sector to continue to lead growth. Moody's gave Argentina a Ba3 rating and Standard and Poor's gave it a BB rating.<sup>4</sup>

<sup>3</sup> Poland, Argentina, and Mexico Projected to Have Lowest Investment Risk of Ten Largest Emerging Markets, Standard & Poor's DRI, News Release, Lexington, Mass., July 15, 1998.

<sup>4</sup> Economic Development Corporation, *Guide to Country Risks and Opportunities*, Mar 1998, pp. 32-33.

## 5.2 *Political Risks*

Argentina has enjoyed a long period of political stability under the current president, Carlos Menem. The ruling party, Partido Justicialista (known as the Peronists), as well as all others are very focused on upcoming elections in May 1999. President Menem has given up his aspirations to revise the constitution and seek a third term. The Menem camp endorsed Ramon Ortega as its Peronist candidate for 1999. Ortega is currently National Secretary of Social Development, and a former Governor of Tucuman, a northern province. Mr. Ortega will have to face the current Governor of the Province of Buenos Aires, Eduardo Duhalde in a runoff of "pre-candidates".

The legislature is currently dominated by the Alianza, an alliance of the Union Civica Radical (commonly referred to as the Radical Party) and the centre-left party, Frepaso (composed of social democrats and former Peronists). As the chief opposition to the Peronists, the Alianza has selected two presidential pre-candidates, Fernando De la Rúa, Chief of Government of Buenos Aires City (Radical Party) and Graceila Fernandez Mejjide (Frepaso).

Both candidates are strong national figures, Mr. De la Rúa because of a strong anti-corruption stand, and Ms. Fernandez-Mejjide because of her active involvement in human rights campaigns in the past against the military. Their respective popularity may mean that neither would take the low-profile vice-presidential position in favour of continuing as Chief of Government in the City of Buenos Aires (for De la Rúa) or a run at the governor's office of the Province of Buenos Aires (for Fernandez-Mejjide).

One of the major policy issues in upcoming elections is the labour sector which remains plagued by an unemployment rate of around 15 percent. Analysts argue that the benefits of strong economic growth need to be shared more equitably and the flexibility of the labour market increased to insure continued stability.<sup>5</sup>

## 5.3 *Economic and Financial Risks*

Argentina had the fastest growing economy in Latin America in 1997, with GDP expanding by about 8.1 percent. Given the current regime's consistent economic policy, local and foreign investors have remained very confident about Argentina's economy, which went through structural reforms in public finance in the 90s. Improved revenue systems, government downsizing and re-structuring, and privatization boosted investor confidence. Argentina's peso is pegged to the US dollar and was able to maintain that linkage despite the crisis that ensued following Mexico's financial debacle in 1994.

In the short term, economic growth is expected to slow down with the reduction in activity in Brazil. Moreover, as a result of Argentina's current account deficit and investors' concerns with the fate of the monetary region of Hong Kong, China, there has been some cooling off in the economy. Certain sectors continue to attract much of the investment, particularly mining and oil.<sup>6</sup>

Obtaining credit locally is very difficult. This results from a lack of liquidity in the financial system and current banking practices in general. Letters of credit and drafts are the most common forms of payment.

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<sup>5</sup> Ibid.

<sup>6</sup> Economic Development Corporation, *Guide to Country Risks and Opportunities*, March 1998, p. 32.

**5.4**            *Commercial Risks*

Foreign lenders' concerns have been reduced by the convertibility of Argentina's exchange rate and the parity of its currency with the U.S. dollar.

Investors need to consider obtaining intellectual property rights protection. Patent law remains undeveloped and poorly enforced.

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## REFERENCES

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A good source of urban environment information and indicators, as well as appendices of city and country statistics such as populations.

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Yound, Margaret Walsh and Susan L. Stetler, eds., *Cities of the World, The Western Hemisphere*, 3rd Ed., Vol. 2, Detroit, Michigan: Gale Research Company Book Tower, 1987, pp. 17-18.

The book touches on Buenos Aires providing some basic information on the city's history. Much of it is very general, however, focusing more on the country than the city.

**National Round Table on the Environment and the Economy (NRTEE)**

**PROSPECTUS FOR  
A CANADIAN SUSTAINABLE CITIES INITIATIVE  
IN HANOI, VIETNAM<sup>1</sup>**

**SUMMARY**

Hanoi, the capital of Vietnam, has a population estimated at 3.5 million people, and has been growing rapidly. Recent economic reforms are expected to accelerate urban growth further, and populations of Hanoi and nearby Haiphong are expected to double by 2010, far beyond the capacity of current infrastructure to support them.

Industrial development and construction activities in cities are thought to be growing at 15-16% per year. Foreign investment -- which stood at zero just a few years ago -- now exceeds \$30 billion in commitments and around \$8 billion in actual inflows. As foreign investment accelerates, contrasts between the older lagging and environmentally-burdensome industrial sector and more technologically-sophisticated new industries are expected to be sharp.

As a result of combined urbanization and industrialization, demand for electrical power is projected to grow by at least 11.6% per year between now and 2010. The short term target is to add 3,000 megawatts to the existing capacity by 2000, at an estimated cost of US\$1-1.5 billion. Private and foreign-invested power plants constructed under build-operate-transfer (BOT) agreements will be encouraged to do this work. These investments present real opportunities for complementing conventional hydro-electric and other large-scale power sources with environment-friendly renewable energy, co-generation and energy conservation technologies. Such alternatives are both cheaper and more sustainable. The current Asian financial crisis is likely to create a favourable climate for lower-cost options that can be carried in many locations at once, rather than a few more vulnerable mega-projects.

Canadians could build on current excellent relations with national, provincial and municipal governments in the Hanoi and Haiphong region to develop immediately feasible community energy supply and conservation initiatives. They might begin with micro-cogeneration, low-head hydro, wave-mill, and similar tested options that reach well into the surrounding countryside. Complementing these efforts would be work to transfer building and industrial process energy and water conservation technologies, and energy from waste technologies that could be locally produced. While previous work has largely been in sanitation and water pollution control, this has less prospect of immediate financial returns than do energy options.

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<sup>1</sup> This prospectus was prepared for the National Round Table on the Environment and the Economy (NRTEE) by Lisa Van Buren of The Bayswater Consulting Group, Inc., supported by Cynthia Taha, using information from the World Bank, DFAIT, CIDA, and other sources. Tim Campbell of the World Bank provided useful information on the port of Haiphong, as well as encouraging the inclusion of Hanoi as potential starting city. Robert Kalnins of Sodexen provided comments on the current Canadian involvement in Hanoi, as did Flora Liebich of CIDA. David Crenna and David Morgan edited the document. Any errors or omissions are the sole responsibility of The Bayswater Consulting Group Inc.

## **SUCCESS FACTORS**

### **1. Basic Information**

Hanoi, the capital of Vietnam, is located in the Red River Delta in the northern section of the country. The 1996 population of Hanoi was estimated at 3.5 million people. 19% of Vietnam's population is urban, while 65% of the work force is involved in agriculture. Under recent economic reforms that are expected to accelerate urban growth rates from nearly 4% presently to 5-7% by the year 2000, total urban population would be 21-24 million with the aggregate populations of Hanoi, Ho Chi Minh City and Haiphong expected to total between 10-12 million.

Vietnam's economic growth averaged 8-9% a year for the past five years. In 1996, it grew 9.5%. Industry and construction are growing 15-16% per year. Foreign investment -- which stood at zero just a few years ago -- now exceeds \$30 billion in commitments and around \$8 billion in actual inflows. As foreign investment accelerates, the contrast between the present industrial sector and the more technologically sophisticated industries is expected to be sharp.

Economic growth has created a middle and upper class of society, as well as opportunities for the Vietnamese to become consumers in a developing market economy. One of the main outcroppings of this growth has been a boom in real estate development and construction. International quality hotels, office complexes and residential units for foreign workers have been developed at a rapid pace.

Vietnam's foreign trade is also growing quickly. Vietnam exports coal, textiles, footwear, coffee, rice, seafood, and oil. Bilateral trade with the United States has grown rapidly and exceeds \$1 billion a year. Overseas Development Assistance (ODA) plays an important role in Vietnam. Capital commitments at the end of 1996 totalled \$8.4 billion per year with actual cash disbursements of \$2.7 billion.

### **2. Governance**

Vietnam has been changing from a centralized, largely controlled, socialist economy to one which is primarily market driven. The Vietnam Communist Party (VCP) has a president, Tran Duc Luong, and a new head of government, Prime Minister Phan Van Khai, who came to power in September 1997.

Despite the party's entrenchment, the VCP launched a process of market reform in 1986. Known in Vietnamese as "Doi Moi" ("renewal"), the process aims to restructure Vietnam's regulatory, legal, administrative, business, investment, and foreign trade policies to produce a market economy "with socialist characteristics" under state management. Reform helped decentralize economic decision-making, encouraged small-scale private enterprises and largely dismantled agricultural collectivization.

Vietnam can boast considerable progress in creating a legal framework for business. But as with its newly reformed judicial system, these laws are new, remaining largely unstructured and informal. The World Bank assessed the system as having overlapping authority between legislative and executive branches and inconsistent standards set out by multiple levels of government. This duplication often results in uncertainty and increased transaction costs.

Transparency International's corruption index ranked Vietnam just above Venezuela and India. Vietnam scored a very low 2.79, with 10 being a totally corruption-free country.

### 3. Need

Investment in sanitation and drainage has lagged behind investment in urban water supply. Population and industrial growth have overwhelmed the capacity of urban infrastructure and institutions to protect waterways and air quality in Vietnam's larger cities. Urban pollution, due to inadequate domestic, industrial and solid waste treatment and disposal, has become an issue of concern to Hanoi's government.

Constraints on transportation, housing, and livability within central Hanoi is pressuring development of Hanoi's infrastructure and of satellite cities. In Hanoi, specifically, the increasingly dense population of the central core and large number of deteriorating buildings are overwhelming the city's infrastructure, making it very difficult to provide basic water, sanitation, transportation, and telecommunications services. Moreover, as Vietnam progresses toward a market economy within a socialist political system, its bureaucratic financial and legal systems require modernization. Priorities for infrastructure development in Hanoi include high speed telecommunications, modern mass transit, parking, and adequate sewage facilities.

### 4. Financing

#### 4.1 *Vietnamese Public-Private Investment Legislation*

Under new foreign investment procedures introduced in 1987 by reform-minded leaders, about 1,026 investment applications were approved through August 1994, of which 515 (50%) were for industrial enterprises accounting for 37% of total investment capital. Several of these investments upgrade existing industries, but most finance new light industries.

The Foreign Investment Law also sets out three forms of business enterprise, joint ventures, contractual business cooperation (CBC), and enterprises with 100% foreign-owned capital.

#### 4.2 *Foreign Financing*

Vietnam's positive balance of payments is largely due to continued foreign financing, Foreign Direct Investment (FDI) and Overseas Development Assistance (ODA). Vietnam's foreign currency reserves are fairly strong and the government believes the current account deficit trend can be curtailed. The government contends that a large proportion of imports is capital equipment, which soon will be producing export goods.

The World Bank has two substantial infrastructure-focused projects currently in the pipeline for Hanoi. They include a project to rehabilitate the city's water supply for US \$98 million, and an institutional capacity building project worth US \$45 million to improve the efficiency and safety of Hanoi's urban transport systems.

INTERNATIONAL ECONOMIC INDICATORS	1993	1994	1995	1996	1997
Foreign Direct Investment (\$bn)	0.71	0.65	1.80	2.20	7.50
Foreign Exchange Reserves (\$bn)	0.64	0.78	1.08	1.70	2.20
Total Foreign Debt (\$bn)	17.70	19.60	26.80	30.80	36.00
Total Foreign Debt/GDP (%)	114.0	116.0	141.8	143.3	148.1
Debt Service Ratio (%)	28.5	12.0	5.1	5.0	5.0
Current Account (\$bn)	-0.87	-0.88	-1.50	-3.40	-4.52
Current Account/GDP (%)	-5.6	-5.2	-7.9	-15.8	-18.6
Exports (\$bn)	2.80	3.60	5.30	7.08	8.85
Imports (\$bn)	3.50	4.00	7.50	11.18	14.19
Foreign Trade Balance (\$bn)	-0.70	-0.40	-2.20	-4.10	-5.34
Currency Exchange Rate	10639.7	10946.9	11074.3	11037.5	11523.6
Currency Change (%)	4.1	-2.9	-1.2	0.3	-4.

Source: *Country Forecasts, Vietnam*. The Political Risk Services Group, January 1998.

#### GROSS DOMESTIC PRODUCT PER CAPITA

ECONOMIC INDICATOR	1993	1994	1995	1996	1997
GDP (\$bn)	15.52	16.89	18.90	21.50	24.30
Per Capita GDP (\$)	220	235	255	285	325
Real Growth Rate (%)	8.1	8.8	9.5	9.3	6.5

Source: *Country Forecasts, Vietnam*. The Political Risk Services Group, January 1998.

## 5. Managing Risks

### 5.1 Overview

Foreign Direct Investment in Vietnam faces risks associated with corruption, "red tape" and the absence of clear private property rights. FDI fell by over 50% in 1997 and continues to decline as a result of East Asia's financial turmoil. Despite the crisis, Vietnam's new government appears committed to reform. Moody's gives Vietnam a rating of Ba3, and Standard and Poor's does not rate Vietnam.<sup>2</sup>

### 5.2 Political Risks at a National Scale

Vietnam recently experienced some political instability because of its evolving system for succession. Fortunately, the Government managed to resolve its leadership dilemma with the selection of a new president and prime minister in 1997. The new leadership is supportive of reform. However, political risks now arise from lack of consensus regarding the pace and extent of economic reforms. Analysts predict that a replacement for the Communist Party's Secretary General will be someone pragmatic; i.e., interested in maintaining liberal economic policies without threatening the Party's power base.

### 5.3 Economic and Financial Risks at a National Scale

The present Government remains inclined to protect state industries at the expense of competing foreign investments. Inflation should decline slightly, but policy uncertainties, ambivalence of foreign investors, and the heavy debt will retard economic growth, keeping it below the levels of recent years.

However, the economy will be sustained by increased oil production, foreign exchange receipts and foreign aid, improved infrastructure and increased efficiency as a result of less government control. The Government is unlikely to meet its goals of reducing inflation to 3% annually through 2000; or its target of 9% economic growth annually. The drag on economic improvement may be continuing state interference in the economy, including preservation of the state sector, and inefficiencies resulting from corruption, bureaucracy, and retention of a Marxist economic system. In this context, smaller-scale, locally-developed and controlled projects are likely to be far less risky than large-scale or mega-projects.

International Financial Institutions (such as the World Bank and the International Monetary Fund) note that a worrisome amount of imports may be consumption goods, bought on credit. Also, the IMF estimates that as much as 70% of Foreign Direct Investment is debt, not equity. However, Vietnam's debt service payments are estimated at 16% of exports, well within a manageable range.

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<sup>2</sup> Economic Development Corporation, *Guide to Country Risks and Opportunities*, March 1998, pp. 126-127.

The Vietnamese Government is under pressure from the IMF to make further progress with enterprise, banking sector and tax reforms before assistance in the amount of US\$120.8 million will be released. There is a strong interest in the Canadian system of intergovernmental transfer payments, and an apparent desire to increase the authorities and functions of municipalities. Such reforms may occur sooner in regions close to the capital, where there is trust in local authorities.

#### 5.4 *Operational Risks*

As in most command economies and former Communist countries, there is a substantial amount of bureaucratic process involved in doing business in Vietnam. Bureaucracy in Vietnam is both vertical and horizontal. Authority is spread throughout divisions and/or departments. Hence, there is a tendency for peripheral interests to surface during negotiations.

The legal system is still developing and judicial enforcement can be inconsistent. Consequently, it may be difficult to recover losses if contractual obligations are not fulfilled. In addition, laws are changing rapidly. The interpretation of these laws is occasionally inconsistent and some regulations may be in conflict with others. The concept of a contract is new. There is some tendency for negotiations to begin with signing the contract, after which problems are revealed. Although not legally enforceable, Memorandums of Understanding (MOUs) are useful as these documents bring problems to light relatively early in the negotiation process.

Trade financing should be approached with caution. It is recommended that all new-to-market companies should use L/Cs for every transaction. Even after an extended period of time, foreign suppliers should not offer unsecured trade financing to local distributors or importers, even though everything looks right.

Canadian companies should be prepared for hidden costs. Labour rates in Vietnam may be low, but hidden cost can be high, such as rent, personal taxes, and telecommunication costs.

Highlighting the importance of personal connections in Vietnam, the best way to enter the market is to use the services of local agencies. These include local Vietnamese and international management consulting firms, law firms, and local accountants. These firms are likely to know the system and have the necessary connections to facilitate market entry. Companies should always insist on several references of past clients who have successfully completed transactions in Vietnam.

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## National Round Table on the Environment and the Economy (NRTEE)

# PROSPECTUS FOR A SUSTAINABLE CITIES INITIATIVE IN KATOWICE, POLAND\*

### SUMMARY

The Katowice region is the heart of the largest and historically most important industrial region of Central Europe, and is dominated both physically and economically by its massive complex of coal mines, metallurgic and chemical industries, and other heavy industries. The region is a conurbation of fifteen adjoining cities, with a combined population of approximately 2.3 million, covering 1,250 square kilometres. All have historically been independent legal jurisdictions, but they formed an official Union of Municipalities in August 1994, in order to address the daunting urban environmental issues more effectively. Recently, they have been amalgamated by the central government. Katowice accounts for 97.3% of Poland's mined coal, 19% of electricity sales and 55.2% of steel production. It produces 15% of national GDP with 10% of the Polish citizenry on 2% of the country's land mass. Residents tend to be more prosperous than in other parts of the country with lower than average unemployment rates and 21% higher than average national wages.

The International Centre for Sustainable Cities (ICSC) based in Vancouver is leading the Sustainable Katowice Agglomeration Project which promotes infrastructure renewal in the region. ICSC currently has demonstration projects for developing a municipal garbage sorting and composting plant in the region, and improving the region's sewage sludge residue management. ICSC is coordinating a consortium of four firms to provide expertise to these pilot projects. This project and others in the region have received support from CIDA to supply Canadian technical expertise.

There are two main opportunities on the horizon: to expand, deepen, and accelerate involvement in solid waste management and waste reduction through composting and recycling; and to pursue a vigorous initiative to help the region to consume less coal for basic energy needs. Both have substantial prospects of rather immediate environmental returns. Of the two tracks, experts involved in the region appear to favour opening up the second, at least through small-scale pilot efforts, without in any way reducing the first. An "off-coal" energy initiative would have multiple environmental benefits, for local urban air quality as well as reduced greenhouse gas emissions. Starting points could include conversion of buses to natural gas, micro-cogeneration for apartment buildings, energy conservation in buildings, and renovation of district heating systems.

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\* This prospectus was prepared for the National Round Table on the Environment and the Economy (NRTEE) by Lisa Van Buren of The Bayswater Consulting Group, Inc. with support from Cynthia Taha and David Crenna. Martin Crilly of the International Centre for Sustainable Cities provided extensive comments on drafts prior to this one, as well as encouragement to include Katowice among the list of starting cities. In addition, Wit Siemieniuk of AGRA Earth & Environmental International provided details on the waste recycling project in which his company is currently involved. John Herbert, an individual consultant also provided comments on the opportunities in the Polish environmental industries. David Crenna and David Morgan edited the document. Any errors or omissions are the sole responsibility of The Bayswater Consulting Group Inc.

## SUCCESS FACTORS

### 1. Basic Information

The Katowice region is the heart of the largest and historically most important industrial region of Central Europe, and is dominated both physically and economically by its massive complex of coal mines, metallurgic and chemical industries, and other heavy industries.

The region is a single mass of fifteen adjoining cities, with a combined population of approximately 2.3 million, covering 1250 square kilometres. The largest municipality is Katowice, with a 1990 population of 367,000. Eight other municipalities have a population in excess of 100,000, and there are also seven smaller municipalities. All are independent legal jurisdictions. The region formed an official Union of Municipalities in August 1994, in order to more efficiently address urban environmental issues.

The Katowice region plays an important role in Poland's economy as the primary source of key raw materials. Katowice accounts for 97.3% of mined coal, 19% of electricity sales and 55.2% of steel production. It produces 15% of national GDP with 10% of the Polish citizenry on 2% of the country's land mass. Residents tend to be more prosperous than in other parts of the country with lower than average unemployment rates and 21% higher than average national wages.

### 2. Governance

Poland has a presidential system with a parliamentary democracy. The economy can be characterized as "mixed capitalist" given the country's recent command economy past. Industries have been privatized rapidly, following the end of the command economy system. The Democratic Left Alliance party, a group dominated by former Communists heads the government.

Poland ranked 29th on Transparency International's corruption index, just below Belgium, and two other economies in transition, the Czech Republic and Hungary, with a score of 5.08. In brief, it is one of the more stable and congenial of the transitional economies in which to do private sector business.

Support for Poland's economic reform process remains strongly embedded in the current government. The Organization for Economic Cooperation and Development (OECD) recognized this and admitted Poland as a member. The government continues to be plagued, however, by party conflict over the pace and extent of privatization and government restructuring. Current obstacles identified by the IMF and the World Bank include slow privatization, high household debt and inadequate legal regime. Despite the obstacles to Poland's economic recovery, production and real wages grew, while unemployment and inflation fell in 1996.

Although environmental protection remains subservient to economic issues, Poland has made a serious commitment to improving the state of its environment, exemplified in part by its signing and ratification of many international environmental agreements. including the *Montreal Protocol on Substances that Deplete the Ozone*. Major drivers behind the Government's efforts to improve the environment include privatization, modernization and eventual accession to the European Union. Poland has also had some success attracting large amounts of international aid to solve its severe environmental problems, such as the eco-conversion of Poland's debt.

Municipal governance has benefited in recent years from the *Local Self-Government Act* of 1990, which transferred to over 2,400 municipalities the provision of a broad range of local infrastructure and services including water and sanitation, drainage, land development, urban streets, mass transit, and district heating. Given their new ownership of public service assets, local governments have assumed responsibility to mobilize resources for operation, maintenance and expansion of these services.

While central authorities play a large role in the establishment of standards and policies for solid and toxic waste management, it is at the regional and local level that solid waste management projects are undertaken. The Province of Katowice, as with all others, runs a Department of Environmental Protection that is responsible for policy implementation. The department issues permits, collects fees, sets limits on pollution rates for all sources within a facility, and operates its own environmental funds.

Many Polish municipalities, including Katowice, are implementing broad-based pollution prevention strategies. Local officials in Katowice worked in cooperation with the Minister of Environmental Protection to produce a list of the most polluting industries which were subsequently ordered to reduce their emissions. The city also expanded its air quality monitoring system, now one of most extensive systems in Poland.

### 3. Need

Post World War Two industrialization in Poland was characterized by profligate use of natural resources, reliance upon energy-intensive technology, and frequent disregard for externalities, such as pollution. Under this regime, the Katowice region suffered the worst environmental damage in the country, and is today one of the most polluted areas in Europe.

Though Katowice is relatively well off in terms of income and employment when compared to the rest of the country, it is much worse off in terms of quality of life. About 28 percent of all compensable occupational diseases in Poland occurred in Katowice Province, primarily occupational deafness, pneumoconiosis, lead poisoning, vibration syndrome and hepatitis. High infant mortality rates are caused by dust fall, ambient levels of lead, tar, phenols and other chemicals. Children suffer from anaemia, gastro-intestinal diseases, encephalic changes, chromosome damage, and problems with the peripheral nervous system. Environmental degradation results in about 2000 cases of excess mortality annually along with high morbidity rates.

As with most cities in Central Europe, Katowice experienced a drop in air pollution as industrial production slowed down during the transition to a market economy. However, the large number of old and inefficient cars contribute to poor air quality levels. In Katowice, it is estimated that 75 percent of lead emissions come from cars that are 10 to 30 years old and still burn leaded fuel.

Moreover, extensive use of coal for home and building heating contributes to the city's poor air quality. Katowice produces 23% of Poland's total SO<sup>2</sup> emissions in 1992. Air pollution clearly affects the population which has seen increased rates of acute and chronic illnesses such as asthma and bronchitis and a higher risk of lung cancer.

Urban residents are also facing increasing risks from crumbling infrastructure and deteriorating health services. The incident of diseases associated with lower income groups in particular has risen. Diphtheria, tuberculosis, and hepatitis all relate to a decline in sanitary conditions, hygiene and nutrition.

Two-thirds of waterways in the Katowice region are contaminated to a level below the lowest quality classification. Only one quarter of municipal sewage is properly treated, and 44% is not treated at all. The worst pollutants come from coal mining including saline leakage and radioactive elements. Water shortages are a real problem for the region particularly during droughts. An average 8,000 breaks in sewer lines are reported each year primarily because of land subsidence.

The implementing agency for the Sustainable Katowice Agglomeration Project, the Union for Sustainable Development of the Cities of the Katowice Agglomeration, identified a number of priority issues. These include environmental management; local needs and environmental problems; discharge of municipal sewage; water system supply in municipalities; and revitalization of post-industrial barren areas.

#### **4. Financing**

##### **4.1 *Local Financing***

Environmental protection relies on local government authorities and industry for the vast majority of technical and financial resources. However, external aid and technical know-how play a valuable supporting role. One key strategy here is to focus limited external resources within a framework of complementary activities, so that they are complementary to (not substitutes for) local efforts and thus help to achieve the greatest impact on local problems.

The environmental protection process in the Katowice agglomeration was able to build on and link into a number of related initiatives: the regional economic policy programme; the regional environmental project; the Silesia integrated risk management programme; the "Contract for Silesia"; and the PHARE-STRUDER economic reconversion and redevelopment programme.

##### **4.2 *International Financing***

Financing is available from the PHARE programme for projects aimed at the advancement of investment in the private sectors of countries across Eastern and Central Europe. Among the areas given highest priority are the: energy sector (energy efficiency), transportation (railways, air traffic, roads, ports), telecommunications, education, the development of civil administration, development of business, and privatisation.

The International Finance Corporation (IFC) manages the Polish Business Advisory Service (PBAS). Services range from preparation of business plans to accessing financing sources and information on marketing and management. With funding of \$15 million, PBAS has completed 185 projects, which generated or saved 3,000 jobs and a 10 percent investment in small and medium businesses.

The International Finance Corporation (IFC) recently approved commitments of US\$445 million on 24 large infrastructure projects involving foreign partners, mostly on projects based on privatization. IFC's involvement is critical to foreign investors because of IFC's political risk umbrella and generally limited sources of long-term finance available for major projects.

The IFC has also committed significant resources (US\$100 - \$150 million) for several smaller infrastructure projects, especially in the power sector. Promoting these projects through policy dialogue with the Polish government is among the World Bank Group's most important tasks for supporting private-sector development.

World Bank projects in Poland cover a number of municipal infrastructure sectors. In 1994, the Katowice District Heating Enterprise was the recipient of US\$45 million in loans for a project to enhance energy conservation and efficiency in the district heating sector. In the same year, the Global Environmental Facility Fund and Norway provided financing in the amount of US\$1.0 million to promote coal-to-gas conversion in small and medium-size boilers and to improve the overall energy efficiency throughout the heat supply chain, as a means of reducing carbon dioxide emissions. Polish consumers also benefited from a US\$5 million grant by the Global Environmental Facility and private sector participants, which accelerated the introduction of compact florescent lamps into the Polish residential lighting market.

More recently, the World Bank proposed loans totalling US\$22.0 million to finance a program of long-term sub-loans issued by borrowing banks to municipalities and revenue-earning municipal service enterprises. The project, which began in June 1997, is designed as a pilot operation to demonstrate how term-financing of municipal investments at commercial terms can work. Because Poland is now a member of OECD and the economy is on the up-swing, multinationals can now raise project financing and corporate loans from both foreign and local banks. The biggest local firms are also well serviced. More initiatives are needed to accelerate privatization and generate momentum in certain key sectors, such as steel and building infrastructure, which will require massive private capital to finance modernization and expansion needs.

#### *4.3 Development Cooperation*

The UNDP and UNCHS have also been active in technical assistance for urban activities in Poland. The Sustainable Cities Programme (SCP) was established in the early 1990s to put into practice the concepts and approaches developed in the UNEP/UNCHS (Habitat) document "Environmental Guidelines for Settlements Planning and Management". The program strives to build capacities in urban planning and management at the local, national, and regional levels. Partners include, Canada (International Centre for Sustainable Cities) - financial support; Japan (International Environmental Technology Centre) - financial support; UNCHS/UNEP - consultation support; and the UNDP Office for Poland - project support.

#### *4.4 Debt Repayment Prospects*

Economic indicators show Poland continuing to improve as a target for foreign direct investment. With the ratio of foreign debt to GDP declining, Poland's foreign exchange reserves have more than quadrupled between 1993 and 1997.

INTERNATIONAL ECONOMIC INDICATORS	1993	1994	1995	1996	1997
Foreign Direct Investment (\$bn)	1.72	1.88	3.66	5.20	6.02
Foreign Exchange Reserves (\$bn)	3.99	5.73	14.66	17.73	19.98
Total Foreign Debt (\$bn)	45.39	44.00	43.90	44.39	45.19
Total Foreign Debt/GDP (%)	52.7	47.5	37.3	33.0	31.8
Debt Service Ratio (%)	10.6	13.9	11.0	6.3	7.8
Current Account (\$bn)	-5.79	-2.59	-4.25	-1.40	-6.00
Current Account/GDP (%)	-6.7	-2.8	-3.6	-1.0	-4.2
Exports (\$bn)	13.58	17.12	23.46	25.00	27.00
Imports (\$bn)	17.09	18.93	26.69	34.49	40.00
Foreign Trade Balance (\$bn)	-3.51	-1.81	-3.23	-9.49	-13.00
Currency Exchange Rate	1.81	2.27	2.43	2.70	3.00
Currency Change (%)	-33.1	-25.4	-7.0	-11.1	-14.4

Source: *Country Forecasts, Poland*. The Political Risk Services Group. January 1998.

Most of the growth in Poland since 1991 has come from the booming private sector, which now accounts for more than 60% of GDP, attributable mostly to the creation of new private firms. Large-scale industry still remains largely in state hands. The trade and current account balances officially are in deficit but in fact both have comfortable surpluses because of large, unrecorded sales to cross-border visitors.

#### GDP PER CAPITA FOR POLAND

ECONOMIC INDICATOR	1993	1994	117.71	1996	1997
GDP (\$bn)	86.07	92.69		134.50	141.90
Per Capita GDP (\$)	2,240	2,405	3,050	3,485	3,665
Real Growth Rate (%)	3.8	6.0	7.0	6.1	5.5

Source: *Country Forecasts, Poland*. The Political Risk Services Group. January 1998.

## 5. Managing Risks

### 5.1 Overview

Poland is projected to be the lowest investment risk of the ten largest emerging markets in the world. In 1998, Standard and Poor's DRI ranked Poland on the basis of more than 50 variables including governmental policies, economic trends, domestic political and economic risk factors.

Nariman Behravesh, chief international economist for Standard and Poor's DRI notes that "A continued upswing in industrial output together with declining inflation, fuelled by a recent cut in interest rates, has strengthened Poland's economic outlook and raised its ranking to the least risky top ten emerging market for business investment today." In the medium to long-term, Poland's main risks surround ongoing efforts to reduce the fiscal deficit and to accelerate structural reforms. Moody's gave Poland a rating of Baa3, and Standard and Poor's gave it a BBB-.

## **5.2**                    *Political Risks at a National Level*

Despite a good economic outlook, the government faces internal and external challenges as it seeks to maintain market reforms while also satisfying public demands for social spending. Labour pressures for increased wages will also challenge the stability of the government. The Freedom Union party which formed the coalition government with the Solidarity Election Action, will try to guide the government toward less expansionary fiscal policies.

Under a government of shared power, turmoil might intensify because of the strained relations between the president and the legislature. At the same time, improved economic conditions would keep any increases within tolerable bounds. The government will likely maintain the privatization effort and continue the country's movement toward integration with West Europe. However, the government is likely to show less consistency than its predecessor in pursuing closer political and economic ties with European countries.

## **5.3**                    *Economic and Financial Risks at a National Level*

Economic growth in 1997 was a robust 6.9 percent, making Poland one of the fastest-growing economies in the world and the leader among transition economies. The business climate is expected to remain attractive, as adjustments from austerity measures and market reforms are consolidated. Growth is fuelled primarily by domestic demand and by foreign and domestic investment. Inflation will remain in double digits at least in 1998 because of pre-election spending. According to the OECD, the main risk continues to be that the government will be slow to reduce the fiscal deficit and tackle structural problems, retarding economic growth over the long run.

Abundant foreign investment and aid flows are facilitating Poland's debt servicing and repayment. Despite this, Poland's deficit is expected to increase because of the burden of debt repayment and the country's heavy reliance on imports.

## **5.4**                    *Operational Risks*

Petty crime is common and increasing in some areas, particularly in and around public transportation. The larger cities have a more serious crime problem, especially Warsaw, with prevalent car thefts and break-ins, street crimes, and residential burglaries. Violent crime is rare but on the rise. A blackmarket in currency transactions also continues to exist. The Katowice region itself poses no unique risks to operational personnel, except for the effects of higher pollution levels on health.

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## PROSPECTUS FOR A CANADIAN SUSTAINABLE CITIES INITIATIVE IN SANTIAGO, CHILE<sup>1</sup>

### SUMMARY

Apart from New York, London, Los Angeles, Washington, Detroit and Mexico City, the Santiago region is one of the most important cities on the globe for fostering future Canadian economic relations. It is the decision-making centre for the Canada-Chile Free Trade Agreement, the main point of governmental contact for many Canadian mining investors, and a large and discerning urban market in its own right. Reflecting Chile's stable economic and political system, the Export Development Corporation offers foreign investment insurance with no restrictions, and will support the full range of trading terms. The Standard and Poor's Rating for the country is A-, and Moody's is Baa1. The country as a whole is among the highest ranking among developing economies for low corruption and ease of doing business.

Santiago's environmental needs are large, and while legislation is in place, the pace of investment in clean-up is slow. Canadians would do best to concentrate on urban pollution prevention in a number of key contexts which hold out the prospect of financing from savings: air pollution control through conversion to natural gas for vehicles and buildings, water treatment in the context of new development with resulting revenues, and energy-efficient building technology. As regulations become more effective, there will also be a growing market for industrial pollution prevention through clean technologies and for conventional industrial pollution control, especially in tanneries and in food-processing plants.

A major Canadian selling point, apart from a competitive Canadian dollar and an 11% tariff advantage over the United States, is that Canadians have been working on sustainable solutions for Santiago for some time, notably through the "Sustainable Santiago" project of the Toronto-based International Council for Local Environmental Initiatives. In addition, Canada Mortgage and Housing Corporation is making significant inroads in transferring Canadian frame housing technologies to Chile, and this can become a focal point for sustainable infrastructure at a community scale as well.

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<sup>1</sup> This prospectus was prepared for the National Round Table on the Environment and the Economy (NRTEE) by Lisa Van Buren, Cynthia Taha, and David Crenna of The Bayswater Consulting Group, Inc., using information supplied by Nolberto Munier of TEAMIC International Canada, Jacques Rostenne of Perwit International, and Sandra Makinson of ICLEI. It also draws on information from the Prime Minister's Office, Foreign Affairs and International Trade Canada, the Export Development Corporation, the World Bank, and other sources. David Crenna and David Morgan edited the document. Any errors or omissions are the sole responsibility of The Bayswater Consulting Group Inc.

## SUCCESS FACTORS

### 1. Basic Information

Santiago lies in a basin between the coastal range and some of the highest peaks in the Andes. Metropolitan Santiago retains little of its colonial past, with low adobe buildings in typical Latin American style in older parts of town, a centre with modern office buildings, and mix of hastily built settlements and fine modern homes in the suburbs. Foreigners are often impressed by its more European atmosphere than most cities in Latin America.

Over one third of Chile's population lives in and around the capital of Santiago. Projected population figures for Santiago are as follows:

CITY	1970	1995	2015
Santiago (000's)	1,332	4,891	6,066

Source: Urban Data Tables, *World Resources: The Urban Environment*, 1998-99.

Chile's open market economy, stable political system, and clearly stated investment regulations have created the most dynamic market in Latin America. The Santiago Metropolitan Region is Chile's largest and most immediate market.

Chile has the fastest-growing economy in the region, with annual economic growth averaging almost 7 per cent over the last decade. With low unemployment (6.8 per cent), falling inflation (6.2 per cent) and rising wages (7 per cent), this country has established its credentials as a desirable trade and investment partner.

Total trade between Canada and Chile has increased dramatically, more than doubling from \$357 million in 1992 to \$760 million in 1996, with Canada enjoying a positive trade balance of \$75 million. Chile's growth has been mainly in natural resource-based industries such as mining, forestry, agriculture and fishing, but trade is booming in all areas, a sign of the nation's outstanding economic performance.

### 2. Governance

Chile's current policy direction continues to focus on a competitive market economy directed principally by private sector decisions. Even the presidential election in 2000 is not likely to result in fundamental economic policy changes.

Transparency International's 1997 corruption index gave Chile a score of 6.05, out of a possible 10 indicating a relatively low level of corruption. Although this is a slight decrease in its score from its 6.80 rating in 1996, Chile is still the highest ranked country of those profiled for sustainable city opportunities including Argentina, China, Poland, and Vietnam.

The government is actively responding to Santiago's environmental problems. The Special Commission for Pollution Prevention and Reduction in the Metropolitan Region (CEDRM), established in 1990, works with ministries when specific courses of action are recommended. The Commission sponsors studies, publishes air quality data, and has devised emergency measures to reduce pollution and exposure on "crisis" days, as well as creating a master plan of regulations for improving Santiago's environment. However, environmental regulations have tended to be enforced for only new firms.

The National Commission for the Protection of the Environment (CONAMA), is the official body charged with establishing environmental regulations. It completed the regulations for liquid wastes in 1997. Given a recently finished inventory of industries and their discharges, the regulations may be used to target polluting industries and to require control measures. Some technological services do exist for industrial wastewater treatment. However, regulation of industrial solid waste is minimal.

The Ministry of Health conducted a survey requiring industries and hospitals to report on their solid waste production. Unfortunately, while they have an obligation to report, no corresponding requirement exists to treat waste production.

The government also took measures to prevent a reoccurrence of the 1991 cholera outbreak including: a ban on vegetables grown with wastewater irrigation and restrictions on selling irrigated vegetables and fruits outside of Santiago; stepped-up water quality monitoring; chlorination of irrigation water in canals; a public information campaign about the risks of eating raw vegetables and a ban on serving raw vegetables in restaurants. These measures rely, however, on public cooperation and the political will to continue monitoring.

### 3. Need

Expanding infrastructure is a major challenge for the Chilean economy. Rapid economic growth is requiring massive investment in energy, telecommunications, roads, railroads, ports, airports, water supply, and irrigation. Chile's railway system is fairly extensive, but old; no rail passenger service operates north of Santiago. In the next six years, the economy is expected to grow at about 6.0% annually and total investment requirements in infrastructure are estimated at more than \$18 billion.

As growth has proceeded at a rapid pace, the health and productivity costs of environmental degradation have become apparent. Chile's main environmental issues are: (a) urban pollution of air and water; (b) industrial pollution by localized industries, in particular mining; and (c) the intensive use of natural resources. The primary sources of urban pollution include the food industry, fruit processing, tanneries, and pulp and paper production.

Santiago experiences very high levels of air pollution, in many instances substantially exceeding guidelines suggested by the World Health Organization. Air pollution in Santiago causes significant health damage, including premature death and serious respiratory diseases. Air pollution in Santiago is caused by industrial and vehicle emissions as well as street dust blown from unpaved roads and eroded hillsides, and is aggravated by thermic inversion and the city's location in an enclosed valley. Industrial boilers account for more than half of sulphur oxide emissions, with vehicle accounting for another one forth.

Sanitation services in Santiago are considered well developed because most urban households have access to potable water and adequate sewerage. However, the disposal of collected waste water remains inadequate. Only 10% of Chilean sewage systems had effluent treatment processes in 1993. In 1993, 65.4% of industrial liquid waste in Santiago was discharged into the municipal sewer network, and 68.1% of the total volume handled by the municipal sewer systems went to rivers. Except for a small pilot plant that treats about 4% of the city's wastewater, most sewage is dumped untreated into open watercourses.

Contaminated surface water has been used to irrigate about 130,000 hectares of nearby farmland, including about 7,000 hectares used to grow vegetables for raw consumption, resulting in high rates of typhoid, hepatitis, and a 1991 outbreak of cholera in Chile. Considering the risks posed to human health by irrigating vegetable crops with water containing untreated sewage, water pollution in Chile may be far more serious than the more visible air pollution. The Chilean water quality standard specifies a maximum of 1,000 faecal coliforms per 100 ml. However, water samples taken from various waterways in the Santiago region have exceeded this value by more than one thousand-fold.

#### 4. Financing

##### 4.1 Local Financing

Prolonged under-investment in public sector goods and services has created a significant shortage of public-use infrastructure in Chile. In 1995, the government sent two innovative and comprehensive projects to Congress, aimed at increasing private participation in this type of infrastructure: the *Concessions Act* and the *Financing of Infrastructure Act*.

The *Concessions Act* provides guarantees and flexibility in financing to foreign and domestic agents interested in investing in infrastructure projects through concessions. The objective of the *Financing of Infrastructure Act* is to facilitate channelling of resources from institutional investors to infrastructure projects. This Act introduces important changes in the regulation of capital markets, authorizes new sources of financing for infrastructure, and grants greater investment margins.

Backed by enabling government policies, the private sector will take the lead in infrastructure development. Private companies are expected to meet almost all new investment requirements in telecommunications and energy and a major share in the remaining sectors. In the next six years, private investment in infrastructure should account for about \$13 billion, or more than 70% of required investment.

The Metropolitan Company Sanitary Works, EMOS (Empresa Metropolitana de Obras Sanitarias) is responsible for private sector activities in two main areas: investment, and maintenance, quality control and general services. Under the 1989 law on sanitary services, EMOS acquired concessions in drinking water production, drinking water distribution, sewerage collection and sewerage disposal.

Contracts for maintaining water distribution and sewerage networks often involve leak repairs, repairs to valves and fire hydrants and blockages in sewers and house connections. In addition, funding is available for tasks such as the replacement of pipes that have reached the end of their service life, for earthworks and road repair, and for rehabilitation. Maintenance contracts are renewed every 2 to 3 years through a system of public or private tendering.

#### **4.2**            *CIDA Financing*

CIDA maintains very close partnership ties with Chile, particularly in institutional and industrial cooperation. Canada's initiatives in Chile are principally designed to support efforts to achieve sustainable development through long-term partnerships.

The Canada Fund for Local Initiatives supports projects responding to small-scale, local needs. Currently, the Canada Fund focuses on small projects providing economic, technical, educational and social development assistance. The Canada Fund is managed by the Canadian embassy and currently has an annual budget of \$250,000.

Chile benefits from a number of regional initiatives, including the Canadian Technology Transfer Project, which focuses on the countries of the Southern Cone, including Chile.

#### **4.3**            *International Financing*

With successive fiscal surpluses, the country's overall debt burden is being held constant. Foreign investment was about US\$5 billion in 1996, about US\$3 billion of which was direct investment.

As a partner in financing Chile's development, the World Bank has concentrated on lending and technical assistance that addresses new approaches in human resources development and poverty alleviation, infrastructure development, and institutional strengthening. Environmental management and decentralizing of public sector functions have been focal points.

Within the World Bank Group, the International Finance Corporation (IFC) objective in Chile is involved in projects where it brings added value, such as "greenfield" projects, nontraditional industries, cross-border operations, large infrastructure projects requiring longer terms than those usually available, and projects with complex risk-mitigation provisions. The Corporation's gross commitments to Chilean companies over 1991-96 totalled about \$524 million. IFC perceives future opportunities in asset securitization, particularly in connection with housing and infrastructure finance. The IFC has a private sector international capital project development initiative worth US \$30 million to upgrade Santiago's rail infrastructure.

The following table is a summary of Chile's international economic indicators for the years 1993 to 1997:

INTERNATIONAL ECONOMIC INDICATORS	1993	1994	1995	1996	1997
Foreign Direct Investment (\$bn)	0.81	1.77	1.67	4.09	6.00
Foreign Exchange Reserves (\$bn)	9.64	13.09	14.14	14.78	16.50
Total Foreign Debt (\$bn)	20.60	24.50	25.60	27.20	28.00
Total Foreign Debt/GDP (%)	45.1	47.0	38.0	37.8	33.8
Debt Service Ratio (%)	23.1	19.6	25.7	26.0	26.0
Current Account (\$bn)	-2.07	-0.64	0.14	-2.92	-2.40
Current Account/GDP (%)	-4.5	-1.2	0.2	-4.1	-2.9
Exports (\$bn)	9.20	11.60	16.14	15.35	16.50
Imports (\$bn)	10.18	10.88	14.66	16.50	17.60
Foreign Trade Balance (\$bn)	-0.98	0.72	1.48	-1.15	-1.10
Currency Exchange Rate	404.17	420.18	396.77	412.27	417.73
Currency Change (%)	-11.5	-3.9	5.5	-3.9	-1.3

Source: *Country Forecasts, Chile*. The Political Risk Services Group. January 1998.

#### GDP PER CAPITA FOR CHILE

ECONOMIC INDICATOR	1993	1994	1995	1996	1997
GDP (\$bn)	45.66	52.16	67.30	71.91	82.75
Per Capita GDP (\$)	3,315	3,730	4,740	4,985	5,645
Real Growth Rate (%)	6.6	4.2	8.5	7.2	5.8

Source: *Country Forecasts, Chile*. The Political Risk Services Group. January 1998.

## 5. Managing Risks

### 5.1 Overview

Although Chile is among the countries in Latin America hit hardest by the financial turmoil in Asia, medium to long term prospects are considered good for the country. Moody's gave Chile a Baa1 rating and Standard & Poor's rated it an A-.

Chile's fiscal policy continues to be well managed, with the 1996 surplus of about 1% being maintained in 1997, and privatization continued. It has also been a leader in the efforts to create regional free markets and has already reduced its own trade barriers.<sup>2</sup>

### 5.2 *Political Risks at a National Level*

Under president Eduardo Frei Ruiz-Tagle, Chile is expected to remain politically and economically stable. This is forecasted to continue for the next five years. In spring of 1998, Gen. Augusto Pinochet stepped down from his position as commander in chief of the Chilean armed forces, an important step in the securing of Chilean democracy. President Frei is pursuing policies that enjoy the support of the right. Because of the disarray of the opposition and Frei's popularity, the political base for the current positive business environment appears firm.

### 5.3 *Economic Risks at a National Level*

Economic growth is expected to slow slightly, but still remain robust. Despite the impressive amount of diversification, Chile's economic success depends on the price of copper, which accounts for about 30% of export earnings and 15% of government revenues. Chile's financial markets have particularly felt the negative turbulence in Asia. Exports to Asia account for about 7% of Chile's GDP.<sup>3</sup>

Along with the slowing of economic growth, inflation will likely fall. Although capital inflows and rapid growth will contribute upward pressure on inflation, the overall rate is expected to decline because of tight government control over fiscal and monetary policy. Sustaining economic growth will depend on the continuation of high levels of foreign and domestic investment.

After years of steady increases, the national savings rate appears to be levelling off at around 26% of GDP, still well short of the levels attained by such rapidly growing countries as South Korea and Singapore. The country will therefore remain dependent on foreign borrowing and on investment in capital-intensive, extractive industries, chiefly copper and mining. The result will be upward pressure on the Chilean peso. Rises in the peso in 1995 and 1997 have already threatened growth in the traditional high-employment industries such as textiles and footwear, and will threaten the global competitiveness of other important exports, including fruit and wine.

### 5.3 *Operational Risks*

In general, Chile has fewer safety problems than any other Latin America or third-world countries. However, in Santiago and other large cities, there is some risk of robbery, particularly in downtown areas on weekends and after dark.

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<sup>2</sup> Economic Development Corporation, *Guide to Country Risks and Opportunities*, March 1998, pp. 40-41.

<sup>3</sup> Economic Development Corporation, *Guide to Country Risks and Opportunities*, March 1998, p. 40.

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## National Round Table on the Environment and the Economy (NRTEE)

# PROSPECTUS FOR TIANJIN, CHINA: CANADIAN SUSTAINABLE CITIES INITIATIVE<sup>1</sup>

### SUMMARY

Tianjin Municipality is strategically located in the Greater Bohai Economic Region which offers a growing industrial and consumer market of over 350 million people. The region is only 90 minutes away from Beijing by motor vehicle along the recently completed expressway. Canadian companies have been active there for some time and have a good reputation for doing quality work. However, linking Canadian efforts to present a comprehensive package to local and provincial authorities, as well as to foreign-owned manufacturing enterprises, remains a challenge.

Tianjin is the third largest urban region in China after Shanghai and Beijing. It offers an excellent opportunity to link Canadian expertise in development-oriented site services with financing and technologies for upgraded urban infrastructure, particularly in what is called the "Coastal City", composed of three different districts. Tanggu is the most interesting district of the three, because it includes the largest coastal city. Also located within Tanggu district is the Port, administered by Tianjin municipality, and the Tianjin Economic and Technological Development Area (TEDA) -- a special economic development zone designed to attract foreign investment -- under its separate administration. Within the Tianjin municipal government, a Coastal City planning office oversees development planning for the region as a whole.

Attracting investment to address the backlog of air pollution control, wastewater, energy and transport infrastructure problems in the Coastal City is a priority for local authorities. Current expectations are that most population and industrial growth in Tianjin Municipality will take place in TEDA and in the Port area, and other parts of the Coastal City. Of specific interest are: alternative energy sources for industry, e.g., cogeneration based on natural gas; waste-to-energy systems; industrial wastewater treatment with recovery of valuable materials and energy from effluents; energy efficiency in buildings; rapid transit; and renovation of the urban fabric. In comparison with many other regions of China, Tianjin has current and potential revenue sources to finance environmental upgrading. However, projects which pay for themselves, and which create local employment will obviously be given the highest priority by municipal authorities.

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<sup>1</sup> This prospectus was prepared for the National Round Table on the Environment and the Economy (NRTEE) by Lisa Van Buren and Cynthia Taha of The Bayswater Consulting Group, Inc., using information and supplied by Edward Leman and Derek Ireland of Chreod Limited, Ottawa, as well as by the World Bank, the Canadian International Development Agency, the Department of Foreign Affairs and International Trade, and other sources. Aspects of the profile were also discussed with Graham McGarva of the Vancouver firm Baker McGarva Hart, and Haiyan Zhang of ChinaBridge Communications. David Crenna and David Morgan edited the document. Any errors or omissions are the sole responsibility of The Bayswater Consulting Group Inc.

## **SUCCESS FACTORS**

### **1. Basic Information**

Tianjin is considered the gateway to the capital Beijing, with fairly good transportation infrastructure and links to Korea and Japan as well. The Municipality is located on the Bohai Bay and sits near the Yanshan and Taihang Mountains and between the plains of North China and Northeast China. The United Nations estimates that the population of Tianjin city proper is 5,855,044, with the surrounding region raising the total to approximately 9.5 million, third largest agglomeration in China. An estimated 500,000 of Tianjin's population are migrant workers.

Tianjin's large industrial sector is quite diversified, with production in both light and heavy industrial products. The city leads Chinese production in steel, oil and gas, clothing and textiles, chemicals, petrochemicals, precision equipment, electronics, and many consumer items such as motor vehicles, washing machines, television sets, watches and bicycles.

Tianjin municipality has the status of a province. It is located in the middle of a region offering a growing industrial and consumer market of over 350 million people, and only 90 minutes from Beijing by motor vehicle along a recently completed expressway. Tianjin's infrastructure facilities and services compare quite well with other Chinese cities, in part due to rebuilding which took place after the 1976 earthquake.

### **2. Governance**

Changes in China's central government bode well for future investment opportunities. With the death of Deng Xiaoping, the Chinese government has initiated the boldest economic reforms since China opened its doors to world in 1978. Political consensus has coalesced around support for president Jiang Zemin's planned economic reforms in the context of a "socialist-market economy". A significant driving force behind reforms is the new Prime Minister Zhu Rhongji who recently replaced Li Peng.

Zhu Rhongji reportedly has a passionate dislike of corruption and has focused reforms on levelling the playing field for honest, productive enterprises. Based on a survey of businesses active in China, Transparency International's corruption index gave China as a whole a low score of 2.88 out of 10 and ranks it just above Argentina and Vietnam.

Those Canadians familiar with Tianjin after working there for some time find it to have a slower and more conservative pace than do other large Chinese cities. They also find local authorities to be comparatively straight forward to deal with, and do not report requests for unexpected payments, etc. The key issue of governance in Tianjin appears to be the complexity of responsibilities and authorities in a multi-layered region.

According to the Export Development Corporation, the need for reform in China as a whole is pressing. The leadership realises that its main near-term challenge is maintain growth in real GDP at a level sufficient to at least prevent unemployment from worsening much further. Sustainable growth requires the retreat of the state from the economic sector. It is suggested that state-owned industry may have to shrink by two-thirds, with the loss of 70 million urban jobs. Moreover, some 200 million of the 800 million who currently live on the land will need to find jobs in the towns.<sup>2</sup>

How reforms will affect Tianjin Municipality is difficult to say, although it may benefit from greater decision making authority than previously. The central Chinese government is no longer a monolith and does not have the leverage it once had. China's political apparatus is having trouble getting orders obeyed in localities and even collecting taxes due to it, notes the Economist.<sup>3</sup>

There are examples in the past of central efforts to address development and environmental problems in the Tianjin region. As early as the mid-70s, the central government began cooperation with municipal governments on numerous studies and surveys to evaluate the region's ecology. The Chinese Academy of Sciences carried out environmental analysis to pinpoint sources of pollution in the region. In the 80s, authorities developed a monitoring system using remote sensing and incorporated protection of the environment as a planning objective.

Today Tianjin continues to maintain a fairly close working relationship to the state government as many Government of China bureaucrats spend time working at the municipal level in Tianjin. However, reform efforts have been less aggressive in the area than in other parts of China with a more conservative attitude toward reforms. Some would argue that the slow pace of reforms has created a relatively more orderly climate for investment.<sup>4</sup>

### **3. Need at a National and Regional Level**

A United Nations report identified China's cities as having some of the worst water contamination in urban Asia. More than half of the 191 rivers in the Haihe system, which provides water for Beijing, Tianjin, and other cities in four provinces, are so contaminated that they are deemed to be biologically "dead" or non-functional. The incidence of cancer and intestinal diseases has seen a parallel rise.

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<sup>2</sup> "China's Political Cage", *The Economist*, August 8-14, 1998, p. 16.

<sup>3</sup> Ibid.

<sup>4</sup> Interview with Derek Ireland, Chreod Associates, August 12, 1998.

Urban air quality has been getting worse. The Chinese Government expects ambient SO<sub>2</sub> levels to increase through the decade and, given the rapid increase in motor vehicle miles and lack of effective abatement, NO<sub>x</sub> can be expected to increase as well in major cities. It was reported in one newsletter that in Tianjin this past April, 14 people died and more than 1,000 were hospitalized in a disastrous climatically induced outbreak of carbon-monoxide poisoning.<sup>5</sup>

Infrastructure bottlenecks also pose a threat to future growth in Tianjin and in China generally. Investment in transport, telecommunications, and energy has lagged behind that in industry, resulting in chronic shortages of transport services and increased urban congestion. Transport shortages in turn contribute to power shortages, since coal accounts for 70 percent of China's power generation and is mostly transported by rail throughout the country.

Raising capital for infrastructure improvements is a major task: an estimated \$75 billion will be required over the next decade. Although the private sector is expected to play a key role in meeting China's huge infrastructure needs, public spending will also be required.

A high degree of urbanization and a large volume of trade in the Tianjin region impacts heavily on its environment. Authorities expect the degree of urbanization to rise, since Tianjin is one of the leading areas of economic growth due to the development of modern industry and agriculture sectors. As the number of oil and gas fields and chemical production bases increases, more railways and express highways are being built.

Over the next 15 years, the new Master Plan for Tianjin foresees a period of economic renewal, renovation, restoration and restructuring. The Plan contains many initiatives to address the challenges of the coastal region. These challenges include improving transportation links from Tianjin to the coastal cities and enhancing the area's urban amenities, physical environment, and residential quality of life.

#### **4. Financing**

##### **4.1 Local Financing**

Municipal fiscal capacities remain weak in most cities, including those along the coast. As a result of a rapid decline in central government investment in local infrastructure over the past decade, and tight central controls over credit allocations, local governments are increasingly relying on extra-budgetary revenues and administrative direction to State Owned Enterprises (SOEs) to invest or borrow for infrastructure. Since local governments are not allowed to issue bonds, and local SOEs are not likely to obtain central approval for corporate bond issues ahead of State-level SOEs, investment capital formation is becoming an increasingly difficult challenge for municipalities.

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<sup>5</sup> "Urban Energy Goes to Waste: Trash Power", *China Infrastructure Newsletter*, Vol. 3, Issue III, April 1998, p. 8.

Financing is a major challenge for Tianjin, which must make full use of foreign financing, expertise and managerial experience if it is to modernise its infrastructure sector. In response to reductions in central government spending, a growing number of local governments, including Tianjin, are seeking to have non-state firms, particularly foreign investors, finance local infrastructure investments. The primary investment vehicles are concession contracts to cooperative and equity joint ventures, such as build-operate-transfer (BOT) agreements.

Overall, Tianjin region presents foreign and domestic investors with the following benefits:

- a relatively abundant labour supply which is quite well educated and highly skilled, and has a solid reputation for reliability;
- good access to many natural resources in the surrounding northern provinces;
- excellent port and other transportation facilities which, with current and proposed improvements and expansions make Tianjin a major hub for North China;
- a potential revenue stream for Public-Private Infrastructure projects from both port facilities and residents earning incomes well above the Chinese average;
- large tracts of undeveloped land for industrial and commercial development which surround the city and are often close to the port facilities;
- a growing financial sector whose future development may receive increasing attention from the Central Government authorities in the future; and
- lower wage, land and other costs than in most other coastal cities in China.

Lower costs in the region reflect the relatively slower population growth and more modest pace of economic development and reform than in many other parts of coastal China - notably Shanghai and Guangdong Province.

#### 4.2 *National Financing*

Financing in China has to take into account the central government where much of the decision-making power still resides. Central government spending on Tianjin's infrastructure is likely to grow to meet the needs of expanding output in both heavy and light industry. Plans include a shift in allocation of resources to large-scale energy and transportation projects. The government also expects foreign investment to be a key factor in spurring growth.

China has not used BOT financing for any highway projects thus far, although there are five large projects waiting for approval from the State Planning Commission (SPC). These projects, located in Guangdong, Hubei, Fujian, Jiangsu and Tianjin, are expected to win approval by the latter half of 1998. The SPC is currently developing BOT framework legislation and regulations with a view to systematically channelling foreign direct investment into local infrastructure.

The Chinese government has conducted extensive environmental and infrastructure studies as to the potential of this type of arrangement. The World Bank has been developing a pilot BOT concession model (one of the aforementioned five projects, a bridge to be built across the Yangtze River near Wuhan in Hubei Province) usable for Chinese toll road projects

The Bank regards BOT as a good way to increase private investment in China's infrastructure as the Bank decreases its own support for such projects. China's growing enthusiasm for BOT contracts will most likely make more rewarding opportunities available to foreign investors. Bankers expect BOT to ease China's infrastructure investment bottleneck, and believe that the number of profitable projects will increase in coming years.

The Chinese government is financing a new Waste to Energy (WTE) project in Tianjin. The plant is expected to process about 420,000 tons of trash annually, creating 20 megawatts of power. Australia's Great Pacific Financial Group is heading the project consortium and is the first Western company to execute a WTE deal on China's mainland. The project is worth \$50 million and has a 25 year BOT agreement.

#### 4.3 *International Financing*

China has been the World Bank's largest borrower since 1992. In FY97, \$2.8 billion of Bank funds went to China. The Bank's Country Assistance Strategy for China identifies four areas to focus on operationally: macroeconomic and structural reforms, removal of infrastructure bottlenecks, poverty alleviation, and environmental protection. Urban environmental issues are specified as important challenges relevant to the latter three focus areas. The Bank's most recent assistance to Chinese policy-makers is its 1997 environmental study, "Clear Water, Blue Skies", produced in close collaboration with China's National Environmental Protection Agency and the SPC.

Other studies include urban environmental management, the environmental impact of coal use, energy conservation, options in greenhouse gas emissions control, and biodiversity conservation. Based on the findings of these studies the Bank has channelled almost \$3 billion to improve air and water quality in urban centres nationwide and to other developments to improve the quality of life in China's cities.

In FY97, the largest share of World Bank support was directed to China's goal of alleviating major infrastructure bottlenecks. The Bank approved \$1.52 billion for five projects aimed at improving and expanding transport systems and power capacity. A World Bank project to facilitate inland transportation, including increasing efficiency at Tianjin Port is in the pipeline. The project is worth US \$100 million.

In the past few years, lending for environmental protection has become the fastest growing area of the World Bank's program in China. Lending to this sector in FY96 totalled \$720 million for four projects addressing industrial and commercial environmental problems and reforming environmental protection policies in the Yangtze Basin (Shanghai, Yunnan, Chongqing, and Hubei).

In 1997, the Hubei Urban Environmental Protection, Yunnan Environment, Second Shanghai Sewerage, and Chongqing Industrial Reform and Pollution Control Projects were approved, to address urban air and water pollution.

Other agencies and institutions have been increasingly involved in China's urban environment sector. For example, the Asian Development Bank (AsDB) has recently commenced lending in urban water resources, water supply and wastewater treatment in China. AsDB's Technical Assistance program has recently included considerable advisory work on urban environmental planning, infrastructure services cost recovery, and municipal finance.

Bilateral agencies, including Japan's Overseas Economic Cooperation Fund, Japanese International Cooperation Agency, British Department for International Development, Danish International Development Agency and CIDA have been providing financing and technical assistance on several urban environment initiatives.

The UNDP/UNCHS/World Bank's Urban Management Programme is currently seeking to support initiatives in individual cities in China on urban poverty, urban environmental management and participatory urban governance.

Both the International Finance Corporation and AsDB's Private Sector Group are actively pursuing equity and debt investments in urban infrastructure projects involving participation by non-state sector, particularly direct foreign investors.

INTERNATIONAL ECONOMIC INDICATORS	1993	1994	1995	1996	1997
Foreign Direct Investment (\$bn)	27.52	33.79	35.85	42.00	30.00
Foreign Exchange Reserves (\$bn)	21.20	51.62	73.58	105.00	123.21
Total Foreign Debt (\$bn)	84.00	93.10	106.50	113.00	118.00
Total Foreign Debt/GDP (%)	14.0	17.2	15.4	14.3	13.6
Debt Service Ratio (%)	11.1	8.3	9.6	10.1	10.4
Current Account (\$bn)	-11.61	6.91	1.62	4.50	4.00
Current Account/GDP (%)	-1.9	1.3	0.2	0.6	0.5
Exports (\$bn)	75.66	102.56	128.11	134.52	148.00
Imports (\$bn)	86.31	95.27	110.06	122.50	132.00
Foreign Trade Balance (\$bn)	-10.65	7.29	18.05	12.02	16.00
Currency Exchange Rate	5.7620	8.6187	8.3514	8.3142	8.2952
Currency Change (%)	-4.5	-49.6	3.1	0.4	0.2

Source: *Country Forecasts, China*. The Political Risk Services Group, January 1998.

## GDP PER CAPITA FOR CHINA

ECONOMIC INDICATOR	1993	1994	1995	1996	1997
GDP (\$bn)	601.08	540.51	691.32	789.14	868.05
Per Capita GDP (\$)	500	445	565	640	695
Real Growth Rate (%)	13.5	12.7	10.5	9.7	10.0

Source: *Country Forecasts, China*. The Political Risk Services Group, January 1998. Note that the GDP per capita for Tianjin is several times the national figure.

### 5. Managing Risks

#### 5.1 Overview

According to the 1998 Standard and Poor's DRI Country Risk Review, China ranks third riskiest among the top ten emerging markets in terms of risk after Indonesia and South Africa. The report notes that the "outlook for China... remains problematic largely because of a likely devaluation of the renminbi next year, a continued decline in the growth of exports because of falling demand in Asia overall and rising domestic deflation there."<sup>6</sup> Moody's gave China a rating of A3, and Standard and Poor's gave it a BBB+.<sup>7</sup>

#### 5.2 Political Risks

Although the current Chinese government remains committed to reform efforts, analysts suggest the support for Communist Party leader Jiang Zemin could falter if confronted by a foreign policy reversal, political or financial unrest in Hong Kong, or economic difficulties. Canada's Export Development Corporation is concerned that the government may lack the political resolve to implement meaningful enterprise and banking sector reform without an overhaul of the social safety net. Structural reforms will likely lead to increasing numbers of displaced persons who represent a potential source of unrest. Unless growth is high enough to absorb the workers displaced, it could be difficult to sustain the social and political consensus necessary to carry the reforms through.

Political risks in Tianjin could be somewhat more lower than for China as a whole given the Province's relatively measured approach to economic reform and less dramatic population and economic growth as compared to other areas. The Tianjin Government supports city planning efforts and has been less opportunistic than other regions in developing the Municipality.

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<sup>6</sup> Poland, Argentina, and Mexico Projected to Have Lowest Investment Risk of Ten Largest Emerging Markets, Standard & Poor's DRI, News Release, Lexington, Mass., July 15, 1998.

<sup>7</sup> Economic Development Corporation, *Guide to Country Risks and Opportunities*, March 1998, pp. 42-43.

Moreover, Tianjin's provincial status gives it legislative independence and fiscal powers not enjoyed by other cities, with the exception of Shanghai and Beijing. Power sharing with the state and decentralized decision making will improve the Municipality's ability to implement changes.

### 5.3 *Economic and Financial Risks*

As a result of expected moderate growth, the Government of China could face increasing demands, and possibly overt protest, for political liberalization and economic changes benefitting consumers. Despite these risks, officials favour continued gradual movement in the direction of economic liberalization. The climate for international business may also be affected by disagreements between the central and regional governments and by international political tensions.

China's overall prospects for economic growth depend critically and increasingly on the government's success in reforming the state-owned enterprise (SOE) sector and repairing the badly weakened financial position of banks. Many of the highly-indebted SOEs are effectively bankrupt and overburdened with redundant workers. Although the SOE sector accounts for less than 20% of GDP, it employs two-thirds of the urban labour force and provides essential social welfare functions for its work force.<sup>8</sup>

A sharp decline in contracted foreign direct investment in 1997 resulted in part from growing investor uncertainty about Asia's and China's economic outlook. Concerns about pervasive corruption and red tape have hindered development across China generally. However, there are opportunities for development in regions such as Tianjin, which continue to provide investors with relatively low risk opportunities.

### 5.4 *Operational Risks*

Commercial risks in China depend on the sector of the city or the Chinese agency with whom a Canadian company is dealing. Getting paid for services can be in doubt, as it is in many countries. In the power business for example, one industry source said he thought "almost all Western developers" have power bills going unpaid.

Most companies had received similar explanations as to why their clients, the power grids, were not paying. "They tell us that they are gaining no revenues to pass on," said a Beijing-based power executive. Although most companies do not completely believe this, there may be little they can do except to keep providing the power, and hope. Many are afraid to go public with their information out of fear they will anger the Chinese power authorities. Nevertheless in some cases, there are measures that can be taken, including the option of resorting to commercial courts.

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<sup>8</sup> *OECD Economic Outlook*, June 1998, p. 148.

The risks to operational personnel are minimal. The crime rate is still very low in China, but has increased recently in large cities. Theft is becoming more common, but violent crimes are very unusual.

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**PART C: SELECTING ADDITIONAL PLACES TO  
PURSUE A CANADIAN SUSTAINABLE CITIES  
INITIATIVE**

## 1. INTRODUCTION

This Part focuses on the process of selecting *additional* cities and urban regions, in the event that the starting cities listed above are successfully launched, that one or more does not prove feasible to address in the near future, or in the event additional resources and organizational energy are found to become more ambitious. For example, investing in capital projects to meet the urgent needs of urban residents around the globe is a prime candidate for the International Monetary Fund and the G-7 countries to stimulate the economies of developing and transitional regions hard hit by recession since the autumn of 1997.

In selecting additional candidates, many of the same criteria need to be applied, but additional factors can also be brought into play, such as increased risk coupled with more assured financing. As well, constraints which served to shorten the initial list, such as geopolitical considerations unrelated to urban environmental need, could be taken off.

Four specific methods of selecting additional cities along these lines are explored here:

- using established NRTEE mapping methods to *proceed further down the list of urban regions in which Canadian organizations are already very active*, proposing cities in accordance with the volume and diversity of Canadian interest;
- determining the *comparative availability of financing available from International Financial Institutions (IFIs)* such as the World Bank, and then selecting within those with the largest and most relevant upcoming projects;
- determining *Canada's vital broader economic interests*, such as locations of most active manufacturing investment abroad, and the cities and regions in which complementary initiatives could most improve Canada's image and commercial returns;
- determining those *Canadian foreign policy objectives which have most to gain from sustainable cities activities*, such as peacebuilding and post-conflict reconstruction, and choosing centres or regions which best meet these criteria.

## 2. USING ESTABLISHED NRTEE MAPPING METHODS TO CHOOSE ADDITIONAL CITIES

### 2.1 Selecting Additional Cities With Large Clusters of Canadian Interests

#### 2.1.1 Introduction

In selecting the next group of most likely prospects among urban regions after Accra, Buenos Aires, Hanoi, Katowice, Santiago, and Tianjin, the same NRTEE mapping methods could be applied to cities a little further down on the list of the top 22. This approach would involve removing some of the criteria used to eliminate cities from consideration in the first round. It could also entail undertaking additional due diligence to address concerns of local readiness, capacity, governance, assured financing, managing risks, etc.

The table below shows the urban regions in which Canada has the most intensive current relationships, from the perspective of combined development and commercial interests either directly addressed to urban environmental issues, or closely associated with environmental improvement, e.g., telecommunications infrastructure .

#### CANADIAN ACTIVITIES IN URBAN REGIONS OF DEVELOPING AND TRANSITIONAL ECONOMIES: THE FIVE MOST INTENSIVE RELATIONSHIPS

URBAN REGION	PROJECTS	TYPES OF PROJECTS/RELATIONSHIPS
1. Bangkok, Thailand	15	11 private sector venture agreements for urban projects. 2 individual university partnerships. 2 university consortia.
2. Manila, The Philippines	13	11 private sector venture agreements for urban projects. 1 development research project (water pollution). 1 urban training project.
3. Sao Paulo, Brazil	13	11 private sector venture agreements for urban projects. 1 development assistance project (water). 1 university consortium (UNESCO Sustainable Cities).
4. Mexico City, Mexico	12	7 private sector venture agreements for urban projects. 3 university partnerships (assessment, research). 1 development research projects (environmental policies). 1 development assistance project (youth in slums).
5. Jakarta, Indonesia	12	8 private sector venture agreements for urban projects.. 1 financial partnership for private sector urban development. 1 development research project (pollution, waste reduction). 2 university partnerships (research, training).

### 2.1.2

#### *Bangkok, Thailand*

Thailand was originally eliminated from consideration because of the "economic meltdown" which began there with the devaluation of the baht in July of 1997. In addition, Bangkok itself was assessed to be a somewhat more difficult environment in which to operate than other centres within Thailand itself, and within Southeast Asia as a whole.

Nevertheless, Canada already has a strong foundation in the field of urban environmental planning and management in Bangkok. Through the Canadian Universities Consortium, Canadians have worked with AIT on several projects including urban environmental management graduate program, assessments of transportation, urban environment, tourism and waste management issues, and development of a low-cost housing system.

The NRTEE mapping summary of recent Canadian involvement in Bangkok includes private sector venture agreements, university north/south partnerships supported by IDRC, and other Canadian university consortium initiatives. In addition, there are currently four IFI-funded projects involving Bangkok, which could help to mitigate the undeniable risks of operating there.

### 2.1.3

#### *Manila, The Philippines*

The Philippines, although certainly affected by Asia's financial turmoil, remains one of the most stable economies in the region. In the first half of 1998, the seven largest banks all posted profits. As well, foreign investors are continuing to push ahead with planned investments. Consumer spending has declined but has not collapsed as in other countries.

The mapping summary of recent Canadian involvement in Manila includes Team Canada private sector agreements, a water pollution research project, and a community NGO training project. Examples of Canadian companies working in Manila include AGRA Inc., which has opened an office for power, infrastructure, environmental and systems engineering; AXOR International Inc., which has a large project with the private sector for the development of eight hydroelectric power plants; and ECO Process & Equipment Inc., which has also opened an office in Manila and has several private/public sector project in industrial and domestic wastewater treatment.

There are currently five IFI-funded projects involving Manila.

#### 2.1.4

#### *Sao Paulo, Brazil*

While Brazil has also been adversely affected by the economic instability of 1997-98, it remains an economy of major interest in shaping Canada's long-term trade, investment, political and cultural relationships.

Sao Paulo has a number of environment and infrastructure-focused Canadian projects by both the private and public sectors. Examples include the Watershed Management 2000 project jointly sponsored by Environment Canada and CIDA. The goal of the project is to improve management of water resources and sewage in the Metropolitan Sao Paulo region.

On the private sector side, HYGREX-Spher Industries are now marketing and distributing their closed-loop drying system environmental technology in Brazil, beginning in Sao Paulo. Mackenzie International Strategies, Inc., have begun implementation of telecommunications infrastructure projects. Wintec Energy Management Corp. has a number of projects with both the private and public sectors for research, technology transfer, and training in environmental technologies and infrastructure.

There is also a university consortium project as part of the UNESCO Sustainable Cities initiative. A priority region of the World Bank, Sao Paulo has eight projects currently funded by International Financial Institutions.

In the course of consultations on the most promising places to start, experts knowledgeable about Brazil commented that Curitiba, a city in which there are currently few Canadian contacts, is also nonetheless worthy of consideration as a place very hospitable to sustainable cities initiatives.

#### 2.1.5

#### *Mexico City, Mexico*

While it remains challenging, the Mexican economy continues to provide attractive opportunities for Canadian investors, working within the framework of the North American Free Trade Agreement which took in effect in 1994. Canadian interests in Mexico City have multiplied, and the number of Canadian-owned or managed duty-free "maquiladora" plants along the northern border has more than tripled in recent years.

Mapping current Canadian activities in Mexico City shows there are Team Canada private sector agreements for urban-focused projects, research-oriented university partnerships, a development research project on environmental policies, and another development project to work with youth in low-income areas. The "QUEST" model for sustainable urban regional development is being adapted to help plan a more sustainable future for the region.

Examples of Canadian activities in Mexico City include Export Development Corporation (EDC) support of a large project for goods and services to upgrade electrical utility infrastructure. Harris Canada is also working in this area, supplying 196 telecommunication terminals, to upgrade the city's network to digital, high-capacity transmission. Finally, Mar-Mex Canada is involved in a large private/public project to build 1,600 low-cost houses for Mexico City's urban poor.

Mexico City also currently has four IFI funded environmental and infrastructure projects.

#### *2.1.6 Jakarta, Indonesia*

Though Indonesia has been hard hit by the financial and economic crisis of 1998, coupled with political upheaval, long-term Canadian and IFI interests remain. Moreover, the new government appears more committed to reform, which should increase the prospects for success in social, economic, and environmental development projects.

The mapping summary of recent Canadian involvement in Jakarta includes quite a number of Team Canada private sector agreements for urban-focused projects, a development research project on reduction of pollution and waste, and two university partnerships for environmental research and training. For example, the University of Waterloo and York University both have longterm research and development projects in partnership with Indonesian institutions. As well, ASL Analytical Service Laboratories Limited have initiated a joint venture to open an office for environmental services.

Jakarta is a priority region of the IFI's, including both the Asian Development Bank and the World Bank. Collectively, they are currently funding nine projects there. It would be important in all cases mentioned to determine how the economic crisis in Indonesia and the change of government have affected various projects before proceeding further.

## **2.2 Moving Further Down the List of Most Active Cities**

The remaining cities among the top 22 also have many positive aspects identified by NRTEE mapping, but were originally eliminated for a number of reasons including political instability, the adverse effects of the current economic crisis, overwhelming size or environmental conditions beyond Canadian capacities to respond. However, global economic trends may change, leading to renewed private sector interest in regions currently in difficulty. Other political, economic or environmental risk factors which called for some cities to be excluded may also alter in future.

By removing or modifying these screening criteria, some of which are temporary, the strengths of the remaining 11 cities can come into focus. For example, in the initial round of selections, some cities were eliminated just because they were capitals of their respective countries. Many Canadian urban experts believed the best chances probably lie outside the capital cities, because the political situation elsewhere is often simpler, and a more welcoming environment may also exist. However, capital cities such as Beijing, New Delhi and Dakar are also likely to have the strongest economic and infrastructure support systems for private/public partnerships. They are also the focus of disproportionate numbers of IFI-funded initiatives.

All cities in India were omitted in the first round of choices, regardless of obviously pressing need and active Canadian interest, because of larger international security considerations, i.e., the suspension of aid to both India and Pakistan following nuclear weapons testing by both countries. However, there is hope that this situation can be resolved, resulting in at least a modification of the suspension for projects meeting urgent environmental and social needs. India remains an attractive market for Canadian business. The environmental and infrastructure needs of India's urban areas are also a priority for both local and national governments there. NRTEE mapping shows that both New Delhi and Mumbai have substantial numbers of current private and public sector initiatives underway.

The African cities of Dakar, Senegal and Dar es Salaam, Tanzania are in priority regions for Canadian development assistance, even if the latter has tended to be focused in rural areas in the past. These cities are also building toward a more solid basis for commercial ventures, through government reforms, IFI assistance for building infrastructure and financial reform, and a growing private sector.

There are good Canadian linkages with many cities in the Caribbean, and though Port au Prince is a challenging environment, it is a priority for Canadian development assistance. This urban region is also an important focus of the Inter-American Development Bank, which has recently committed over 175 million \$US for environmental and infrastructure projects.

Obviously, both the opportunity and the need go far beyond this proposed list of urban regions. However, because of higher risk factors to starting an initiative, there is a need for additional compensating factors, such as financing from the IFIs, active Canadian trade and business links, though perhaps not in the urban sector, or actively supporting the priorities of Canada's foreign policy through linking the Sustainable Cities Initiative.

**CANADIAN ACTIVITIES IN URBAN REGIONS OF  
DEVELOPING AND TRANSITIONAL ECONOMIES: ELEVEN CITIES WITH  
SUBSTANTIAL RELATIONSHIPS**

<b>URBAN REGION</b>	<b>PROJECTS</b>	<b>TYPES OF PROJECTS/RELATIONSHIPS</b>
1. Beijing, China	10	5 university partnerships. 2 private sector urban projects. 1 research institute-private sector partnership. 1 development assistance project. 1 urban research institute project.
2. New Delhi, India	10	9 private sector venture agreements for urban projects.. 1 university partnership (research, linkages).
3. Mumbai, India	10	5 private sector venture agreements for urban projects. 3 development assistance projects. 1 development research project (solid waste management). 1 private sector/municipal consortium (sewage).
4. Seoul, Korea	9	9 private sector venture agreements for urban projects.
5. Dakar, Senegal	7	4 development assistance projects. 1 municipal partnership. 1 university partnership (water research). 1 university consortium (housing).
6. Dar es Salaam, Tanzania	7	4 urban research partnerships. 1 development assistance project (housing). 1 urban research partnership. 1 university consortium (UNESCO Sustainable Cities).
7. Rio de Janeiro, Brazil	6	2 private sector venture agreements for urban projects. 2 university partnerships. 1 private sector development assistance project (energy). 1 urban training project.
8. Port-au-Prince, Haiti	6	4 urban development assistance projects. 1 university partnership (urban planning). 1 university consortium (training).
9. Shanghai, China	6	3 private sector venture agreements for urban projects.. 2 university research partnerships. 1 development research project (pollution control).
10. Cebu City, The Philippines	5	3 private sector venture agreements for urban projects. 1 municipal partnership. 1 major development assistance project (water management).
11. Lima, Peru	5	3 development assistance projects for urban issues. 1 development research project (housing). 1 urban planning project (World Bank funded).

### **3. SELECTING CITIES BASED ON AVAILABILITY OF IFI FINANCING**

#### **3.1 Introduction**

In a document prepared for the HABITAT II Conference in Ankara, Turkey, the World Bank chose to focus on a few key urbanization challenges that deserve immediate attention. The Bank called for action in three critical areas:

- urban services to the low-income population;
- environmental health of urban populations;
- urban finance reform.

#### **3.2 Services for the Urban Poor**

When the urban poor are helped to help themselves, the provision of basic services goes beyond bricks and mortar into the engineering of a stronger community. Providing for the need is a colossal task, but the problem of basic services to slums can be solved at a realistic cost between 0.2 and 0.5 percent of GDP over the next fifteen years if done right. It cannot be done by attempting to install a traditional, full-service urban infrastructure in every poor (or even prosperous) neighborhood. The cost is prohibitive. Maintaining limited levels of full service for the next fifteen years would cost more than twice as much as the comprehensive provision of basic urban services.

The World Bank is developing new ways of designing projects focused on the urban poor. This includes defining ways of doing citywide strategic planning of services (multisectoral), which leads to better service provision for the poor. Here city planning techniques combine with assessments of the specific service needs of poor communities. Among the issues to be addressed are problems of accelerating city growth and city size, and measuring and benchmarking how improvements in infrastructure delivery can enhance economic activity and productivity.

The Urban Development Division in the Bank has introduced an initiative to tap the perspective of borrowers to open up the Bank and improve the quality and responsiveness of its urban work. Practitioners' inputs is particularly valuable in areas where it has been difficult to achieve long-lasting results, such as housing standards and regulatory issues focusing on the urban poor, the links between service delivery and social issues, and increasing private sector involvement in service delivery.

Potential Canadian activities in Accra, Ghana would be targeted to the infrastructure needs of the urban poor. Other cities with particular potential for site services and housing solutions would include:

- Manila, The Philippines
- Sao Paulo, Brazil
- Mexico City, Mexico
- Jakarta, Indonesia
- Beijing, China
- Port-au-Prince, Haiti
- Rio de Janeiro, Brazil
- Manila, The Philippines
- Shanghai, China
- Ho Chi Minh City, Vietnam
- Cebu City, The Philippines
- Mumbai (Bombay), India
- Madras, India
- New Delhi, India
- Lima, Peru
- Bamako, Mali
- Ouagadougou, Burkina Faso
- Dar es Salaam, Tanzania

### **3.3 Cleaning Up Pollution to Achieve Healthier Cities**

As the World Bank notes, pollution claims a large share of its victims from among the urban poor. The poor are the city dwellers most likely to rely on impure water sources, the least likely to have access to municipal sanitation services, and the most likely to live along heavily traveled roads and to breathe exhaust fumes instead of clean air.

A major effort to coordinate and apply state-of-the-art knowledge of urban waste management is under way in the Bank. Priorities for urban waste management (both wastewater and solid wastes) support the broad urban priorities identified by the Bank at Habitat II of extending basic services to the poor, providing a clean urban environment, and building financial and institutional capacity for waste management.

Among the cities put forward for early attention, Tianjin, Katowice, and Hanoi all have significant environmental problems which affect the health of their residents. Virtually all the cities listed in the previous section also qualify. The advantage of providing basic services to the urban poor is that there are usually multiple benefits, including a cleaner environment, better health, and greater economic productivity.

### **3.4 Reforming Municipal Finance**

The World Bank notes that major changes are already under way in decentralization to help remedy the failures of urban finance. Top-down, centralized planning for investment decisions has often failed to deliver, and decisionmaking authority over revenue-raising and service supply is gravitating to local levels. Thus, in many countries the urban financing challenge is to manage available resources more efficiently, maintain existing infrastructure, and to mobilize new resources being passed down from the central government to the cities, metropolitan areas, and even to neighborhood associations. The redefinition of intergovernmental fiscal relations and decentralization offer opportunities to provide urban services more responsively and efficiently.

International assistance for urban finance should focus on helping to expand the reach of innovative new practices. In addition to finance and technical assistance in support of new practices, the international community has an important role to play in dissemination and analysis of practices that encourage financial innovation and build understanding of the effectiveness of alternative approaches. The Bank-sponsored Urban Finance Colloquium in September 1995 and the Urban Finance Dialogue at Istanbul played a role in starting this process. The Bank will continue to work with its partners worldwide to build understanding of new approaches to urban finance.

A number of World Bank programs are focused on creating active and effective housing finance systems that mobilizes resources for long-term lending. In a few developing and transitional countries, market-oriented housing finance systems are emerging. When these systems function effectively, they will help reduce interest rate subsidies, and lead to a more competitive financial sector. They will also lead to the provision of more affordable housing. Developing these systems requires an ability to rely on private financial intermediaries competing among themselves. However, it also requires an active government regulatory and supervisory network.

While virtually all cities in the developing and transitional economies have a need for financial reforms, Santiago, Katowice, and Hanoi are of particular concern in this regard.

In addition, because of the drive by the "Visegrad countries" of Central Europe and eventually the Baltic States to enter European institutions of economic and political cooperation, there are likely to be major investments by both IFIs and the European union in municipal capacity-building and infrastructure. Thanks to work by CIDA, the Federation of Canadian Municipalities, the Canadian Urban Institute and others, Canadians would find a welcome in additional cities of Poland, in Hungary, the Czech Republic, Slovakia, Lithuania, Latvia and Estonia. These offer the opportunity to combine major environmental improvement with institutional capacity-building, and more effective utilization of local resources.

**IFI FUNDING IN URBAN REGIONS OF THE DEVELOPING WORLD**

<b>SELECTED URBAN REGIONS WITH IFI FUNDED PROJECTS</b>	<b>NUMBER OF PROJECTS</b>	<b>ESTIMATED FUNDING (\$US MILLIONS)</b>	<b>IFI AGENCIES</b>
1. Jakarta, Indonesia	9	160.6 *	WB, AsDB
2. Beijing, China	8	316.75 *	WB, AsDB
3. Port-au-Prince, Haiti	8	178.6 *	IDB, UN, WB
4. Sao Paulo, Brazil	8	1,750.0	WB, IDB, IFC
5. Rio de Janeiro, Brazil	7	1,000.5 *	WB, IDB, IFC
6. Manila, The Philippines	5	302.8	WB, AsDB, IFC
7. Shanghai, China	5	910.1 *	WB, AsDB
8. Ho Chi Minh City, Vietnam	5	224.3	WB, AsDB
9. Cebu City, The Philippines	4	615.4	AsDB, IFC
10. Mumbai (Bombay), India	4	1,545.8	WB, AsDB
11. Bangkok, Thailand	4	.6 *	AsDB
12. Mexico City, Mexico	4	366.7	IDB
13. Madras, India	3	595	WB, AsDB
14. New Delhi, India	3	300.6	WB, AsDB
15. Lima, Peru	3	288	WB, IDB
16. Bamako, Mali	3	109.1	WB, IFC
17. Ouagadougou, Burkina Faso	3	70	WB, AfDB
18. Dar es Salaam, Tanzania	3	108.3 *	WB, AfDB, IFC

\* Some funding amounts not available.

SELECTED URBAN REGIONS WITH IFI FUNDED PROJECTS	NUMBER OF PROJECTS	ESTIMATED FUNDING (\$US MILLIONS)	IFI AGENCIES
19. Bandung, Indonesia	2	140	AsDB
20. Monterrey, Mexico	2	*	WB, IFC
21. Moscow, Russia	2	347.5 *	WB, EBRD
22. San Salvador, El Salvador	2	90	IDB
23. Dakar, Senegal	2	175	WB
24. Conakry, Guinea	2	45	WB
25. Nairobi, Kenya	2	63.9	WB, AfDB
26. Belleville, South Africa	2	2.6 *	EEC, USAID
27. Guangzhou, China	1	200	WB
28. Abidjan, Ivory Coast	1	20	WB

\* Some funding amounts not available.

## **4. SELECTING ADDITIONAL CITIES AND REGIONS BASED ON VITAL CANADIAN REGIONAL ECONOMIC INTERESTS**

### **4.1 Introduction**

Three regions of the world immediately spring to mind as being of vital Canadian economic interest, based on the volume of Canadian foreign investment, the number of joint ventures, the extent of formal Canadian trade ties, and the exposure of Canadian financial institutions:

- the "maquiladora" region of Mexico, because of the North American Free Trade Agreement, and because a growing number of Canadian companies are locating manufacturing plants in the region;
- the Caribbean region, because it is where Canadian banks have their proportionately largest presence (to other foreign banks), where Canadian development agencies are among the most active, where there are vital Canadian immigrant communities ;
- South Africa, because Canada has long-established political ties with it, especially in supporting the struggle against apartheid, and growing Canadian business interests there.

### **4.2 The Maquiladora region of Mexico**

Within the maquiladora region of Mexico, there is already some Canadian urban environmental involvement in Monterrey.

Mexico's maquiladora zone, once the preserve of U.S. multinationals, is attracting a growing number of Canadian manufacturers seeking cheap labour and a competitive edge. Since the North American free-trade agreement took effect in 1994, the number of Canadian owned duty-free maquiladora plants has more than tripled to 30 from nine, and they now employ more than 10,000 Mexicans, according to the first comprehensive survey of Canada's participation in the Mexican trade scheme.

The Canadian plants are heavily concentrated in the automotive, electronics and textile industries. There are a total of 350 Canadian companies in Mexico, but fewer than 10 per cent of those operate under the maquiladora plan.

**CANADIAN COMPANIES WITH ASSEMBLY PLANTS IN  
MAQUILADORA REGION OF MEXICO  
September, 1997**

COMPANY	CITY	PRODUCT	EMPLOYEES	START-UP
American Sensors	Ciudad Juarez	Smoke alarms	160	1994
A.P.S. Canada Automotive Parts	Manijita	Automotive parts	200	1997
Beck Electric (Noma Industries)	Imuris	Automotive wire harnesses	450	1993
Celestica International	Monterrey	Electronic parts	784	1998
Custom Trim Ltd.	Matamoros	Leather wheel covers	2,800	1994
Northern Telecom Inc.	Monterrey	Phone sets and pay phones	1,600	1994
Noma Industries Ltd.	Nogales	Appliance wire harnesses	2,000	1994
Siemens Electric	Ciudad Juarez	Automotive sensors and bulbs	560	1994
Span Manufacturing Ltd.	Chihuahua City	Electrical parts	250	1991
Stuard Entertainment Inc.	Reynosa	Bingo cards	275	1991
Tan-Jay/Alia, div. of Nygard	Puebla	Apparel	500	1994
TecTrol Inc.	Nogales	Wire Harnesses and cable	420	1993
Versatech Ltd.	Villa Acuna	Automotive parts	240	1994

Source: *Globe & Mail*, "More Firms Flock to Mexico: Number of Canadian Factories Setting Up in Duty-Free Zone Has Tripled Since 1994", Wednesday, July 8, Data are from U.S. Department of Commerce, *Industry, Trade and Technology Review*

Typical of the trend is Noma Industries Ltd. of Toronto, an electronics and auto-parts maker. Noma had no maquiladora plants when the North American free-trade agreement went into effect in January, 1994. Through acquisitions, it has added three plants and 2,450 workers, making it one of the top five Canadian employers in Mexico.

Celestica Inc. of Toronto, a contract maker of circuit boards and other computer components, says it bought a plant in Mexico because that's where its competitors are moving their high-volume and low-skill manufacturing. Celestica acquired a plant in Monterrey from Lucent Technologies earlier this year. Already, the company has plans to double the plant's capacity and is looking at adding a second Mexican factory next year.

The first Canadian companies to shift production to Mexico were auto-parts makers eager to stay competitive with U.S. suppliers to the Big Three automakers, which had already moved there in the early and mid-1990s. Since then, a wide variety of other companies – including a growing number of small and mid-sized businesses – have been drawn to Mexico by competitive costs, the decline of the Mexican peso and easy access to the U.S. market. The Canadian maquiladoras now are an eclectic array of manufacturers, including makers of fire logs, scuba suits, lingerie, bingo cards and pleasure boats.

Mexican-based manufacturers will continue to have an incentive to use Canadian or U.S. components, rather than European or Asian ones, because that way their final products will enjoy NAFTA's preferential duty treatment. This means Canadian companies are positioned for opportunities as suppliers to assembly plants in Mexico that are increasing their North American-origin content. This is especially true for operations that have relocated to Mexico from Asia in order to qualify under NAFTA's rules of origin for duty-free treatment when goods enter the United States or Canada.

#### **4.3 The Caribbean Region**

According to the NRTEE mapping efforts, within the Caribbean region, there are already Canadian urban environmental projects in the following cities and countries, among others:

- Jeremie, Haiti;
- Kingston, Jamaica;
- Havana, Cuba;
- Port-au-Prince, Haiti;
- St. Augustine, Trinidad;
- Santo-Domingo, Dominican Republic.

Canada is an economic force within the Caribbean. However, according to the research conducted on Canadian involvement in the Caribbean, development initiatives have been limited, with the exception of Port-au-Prince, Haiti.

The Caribbean has a number of environmental issues which threaten the health of its urban regions. For example, Barbados, as the most densely populated island in the Caribbean, generates an average of 400 tons of solid waste daily. As this waste is not efficiently managed, all suffer the environmental, aesthetic and health risks imposed by current conditions.

In Jamaica, which has a population of 2.5 million and receives over one million visitors annually, 2,000 tons of solid waste is produced per day, with Kingston generating one third of that amount. Only 60% of all solid waste generated is collected, with some urban areas having only a 40% service coverage.

The uncollected waste is scattered around in vacant lots, streets, gullies, and drains. As a result of these unsuitable collection and disposal operations, there are major environmental problems concerning air, water, and soil pollution, as well as health hazards to local and tourist populations.

The Bahamas is an archipelago with more than 700 islands and cays, of which 20 are inhabited. The Bahamas receive about 3.4 million visitors annually and about 50% are New Providence visitors. The total waste generated in New Providence is about 181,000 tons annually. The only waste disposal facility in New Providence is the Harrold Road landfill. It consists of a 100 acre site with about 45 acres having been land-filled since operations began in 1972. The typical model of disposal in all of the Grand Bahama settlements is to dump, burn and sporadically push the burned material aside to make room for more refuse. The location of most of the official dump sites does not comply with minimal technical standards and their operation poses a high risk to the health of the population and causes pollution to the surrounding environment. Many sites are located in seasonal marshlands, near airports, or near well supply fields and future groundwater supply reserve lands.

#### **4.4 South Africa**

Based on NRTEE mapping work, there are Canadian urban environmental projects in the following cities and regions of South Africa, making it the African country with the largest number of Canadian contacts:

- Bellville;
- Cape Town;
- Durban;
- East London;
- Eastern Cape;
- Johannesburg;
- La Mercy;
- Witwatersrand.

South Africa is Canada's largest trading partner in all of Sub-Saharan Africa. Priority sectors for Canada include telecommunications, mining, agriculture, transportation equipment and services. Following the lifting of trade sanctions in September 1993, the trade office was officially opened in Johannesburg. Canada extended General Preferential Tariff status to South Africa in May 1994 at the time of the inauguration of the new Government. This reduces duty on imports from South Africa by approximately 30%.

Two-way trade has increased by 200% since 1993 with a peak at \$700 million in 1995 (\$325 million exports to South Africa, \$375 million imports from South Africa). Bilateral trade stood at \$675 million in 1996, of which \$235 million were Canadian exports while \$440 million were South African exports to Canada. Over 75 joint-ventures involving Canadian firms are currently registered in South Africa.

The Export Development Corporation (EDC) has established four general lines of credit (\$40 million) with each of the major South African banks (First National, Standard, Nedbank and ABSA) and a general line of credit (\$100 million) with the Industrial Development Corporation (IDC). In November 1995, a Foreign Investment Protection Agreement and a Double Taxation agreement were signed. An agreement to co-operate on agricultural research has been signed, and similar arrangements relating to Defence economic co-operation and industrial security are under discussion.

There is an important political backdrop to Canadian economic interests in South Africa. Canada was for many years a strong supporter of the struggle against apartheid, in particular in the Commonwealth, where Canada chaired the Commonwealth Committee of Foreign Ministers on Southern Africa. Canada funded numerous South African NGO's, such as the Legal Resources Centre, the South African Council of Churches, and IDASA, which challenged the apartheid system through the courts, through support for educational upgrading and other programs to promote a more equitable society.

During the period 1990-1994, Canada provided extensive support for the peaceful transition to democracy, including for development of an interim constitution and preparations for the first non-racial elections in April 1994. Almost 150 Canadians served as election observers under bilateral, multilateral and NGO auspices.

Since the election, Canada has supported South Africa's re-entry into a broad range of multilateral organizations such as the FAO and ICAO, and the two countries have worked closely on important multilateral issues, including the renewal of the Nuclear Non-Proliferation Treaty, appropriate action to be taken against Nigeria in the context of the Commonwealth, and the implementation of the WTO. During 1997, South Africa played a prominent role in the campaign to ban anti-personnel landmines, and was one of the three initial signatories to the Convention at the Ottawa Conference in December 1997.

Current Canadian assistance to South Africa, through all channels, totals approximately \$20 million per annum. In November, 1995, Canada and South Africa signed a General Memorandum of Understanding on Development Assistance, which establishes the parameters within which the development co-operation programme is implemented.

Canada's current bilateral development assistance programme addresses four priority areas:

- governance - support for constitutional development and restructuring and strengthening of South African government and public sector institutions at the national, provincial and local levels;
- human resource development - support for the establishment of effective systems and mechanisms for a broader-based delivery of education and training at all levels;
- support to civil society - support for strengthening the capacities of institutions and organizations within the general civil society as agents of social development; and
- economic development - support for the establishment of broader based economic participation , and the provision of appropriate Canadian technology and skills.

The governance programme includes support for the "twinning" of Canadian and South African provinces; five arrangements have been concluded, involving British Columbia with Eastern Cape; Alberta with Mpumalanga; Saskatchewan with Free State; Manitoba with North West; and New Brunswick with Northern Cape.

In September, 1997 - The chair and other members of the Housing Portfolio Committee visited Ottawa and Toronto to study Canadian models of and experience with social housing policy and delivery.

Estimates of the present urban population vary between 19.6 million and 26 million, and by 2020, 75 per cent of the population will live and work in urban regions. Cities and towns generate 80 per cent of GDP. Better performing urban areas are therefore vital for alleviating poverty and to create a more equitable society. However, there are currently stark contrasts of well-serviced suburban neighbourhoods versus under serviced lower-income neighbourhoods. As well, the city centres are under strain facing the legacy of apartheid and are in need of initiatives which involve the public and private sectors as well as community groups.

The Urban Strategy has five priority areas in which Canadians can become involved.

These include:

- *Integrating the Cities and Managing Urban Growth: The Development Facilitation Act* introduces new measures to facilitate and expedite land development projects by bypassing bottlenecks in existing regulations; The Department of Transport is reviewing policies on public passenger transport and is also assessing transportation infrastructure needs to deal with the comprehensive reforms needed in the urban transportation systems; environmental management is considered a priority and to be integrated into urban development initiatives, including land use planning. In this context, the government has pledged its support for the international Agenda 21, planning, research and environmental education, and pollution control and management.
- *Investing In Urban Development:* Investment will be aim at upgrading existing housing and constructing new housing; restoring and extending infrastructure services; alleviating environmental health hazards; encouraging investment; and through providing job opportunities and social and community facilities. The Municipal Infrastructure Investment Framework (MIIF) sets out the key policy framework in this regard. Major initiatives already begun include the Special Presidential or Integrated Projects on Urban Renewal, which seeks to fast-track and kickstart development in selected crisis and violence torn areas. The emphasis of these projects is on providing integrated infrastructure services, housing and community facilities. Another current project is the National Housing Programme which is mobilising and harnessing the resources and initiative of communities, the private sector and the state to increase sustainable housing delivery.
- *Building Habitable and Safe Communities:* The strategy pursues human and social objectives as much as economic and physical development. Its social objectives will focus on: support to community-based organizations, particularly in the areas of health, education, sport and recreation; social security in the form of social grants, child and family services, provision for the aged and disabled and job creation initiatives; maintaining greater safety and security through addressing the socioeconomic conditions which underpin crime and violence and also through security force/community initiatives to tackle the problems of crime and violence.
- *Promoting Urban Economic Development:* Assertive Local Economic Development (LED) strategies to retain, expand and attract economic activity are to be instituted. The design of fiscal and regulatory mechanisms to support LED is being formulated and pilot projects involving partnerships between stakeholders are being initiated. These efforts are aligned with the implementation of the new small, medium and micro-enterprise policy and the Public Works Program.

- *Creating Institutions for Delivery:* The Urban Strategy requires considerable change in the way South Africans have gone about their business. In the public sector, it means more goal orientated and better monitored management and development-focused priority setting. Intergovernmental coordination will have to be improved. It also requires a partnership approach between the public and private sectors and communities. In short, the institutional implications and requirement of this strategy are far-reaching and challenging.

The transformation of local government, with refocused and reshaped fiscal management will be of major significance. The Local Government Transition Process is one core element of this strategy, while the Extension of Municipal Services Programme aims to back up local government transition by restoring, improving and extending municipal service provision.

Finally the South African strategy outlines the roles of the key role players within and outside of government. Arrangements to enhance coordination and cooperation within the public sector and between government and other role-players will also be a focus of attention. The Urban Development Task Team will provide a key mechanism in this regard.

## **5. SELECTING CITIES BASED ON CANADIAN FOREIGN POLICY PRIORITIES**

### **5.1 Connections Between Foreign Policy Priorities and Urban Environmental Projects**

Although a number of Canadian analysts like Homer Dixon of the University of Toronto have drawn the links between environmental and international security issues, cities are only making their way onto Canada's foreign policy agenda. The NRTEE Sustainable Cities Initiative is, of course, a major step in this direction.

There are many potential links between global cities and foreign policy objectives, most notably in relation to meeting Canada's international obligations under the Kyoto Protocol, the Montreal Protocol, and other key international treaties and agreements concerned with the environment. This chapter will focus on direct links between cities and security, notably in relation to peacebuilding, reconstruction, and the environment.

Four case studies will be considered:

- Russia;
- Bosnia and Herzegovina
- Guatemala;
- Rwanda.

There are, of course, many other possibilities, and the resources required to address all of them, or even a fraction of them would be far beyond Canada's capacities. Nevertheless, by focusing on strategic elements of each urban situation, it may be feasible to meet both foreign policy and international environment and development objectives at the same time.

### **5.2 Developing Alternatives to District Heating in Russian Cities**

Canadian involvement in cities of the Russian Federation is focused on the following urban centres:

- Moscow, Moscow Region;
- St. Petersburg, Leningrad Region;
- Tver, Tver Region;
- Yakutia, Sakha Republic.

Centralized or district heating has developed as the primary method for household heating in the Russian Federation, and in much of the rest of Eastern Europe and Eurasia as well. Approximately 80 percent of the population live in premises that are equipped with hot-water radiator heating systems where the heat is supplied from an external source. Nationwide, the system has a heat supply capacity of 800,000 MW, of which approximately 100,000 MW comes from combined heat and power (CHP) plants. The length of the supply network is estimated at 160,000 km. The system is in very bad repair in many cities of Russia, and could create large vulnerabilities for the population, especially the poor population in a harsh winter. There are already signs that Russia will need humanitarian aid in the winter of 1998-99.

In general, the district heating systems are owned by the municipalities and operated as a municipal service by departments of the local governments. The costs associated with these systems, however, are one of the major items in municipal budgets. High system operating costs, combined with low tariffs and low collection rates, require large municipalities to spend several million dollars each year in subsidizing heating services (about 5% of the GDP on national level). Moreover, despite these substantial outlays, the quality of heat delivered is generally poor, with many households obliged to either supplement their heating with individual space heaters, or to open windows in order to keep their dwellings at comfortable temperatures.

In order to assist municipalities in reducing this budget burden, and at the same time provide a better quality of heat supply to households, the Government has asked the World Bank to consider financing a municipal heating project. The objectives of the project would be: (i) to improve the financial position of municipalities by reducing the amount of funds which must be expended to support municipal heating systems; (ii) to improve the efficiency of heat supply, thereby conserving energy resources while at the same time improving the quality of heat delivery; and (iii) to support institutional improvements to ensure that municipal heating enterprises can operate on a commercial basis, and that the project benefits are sustained in the long term.

The World Bank has been involved in a number of initiatives relating to municipal heating systems both in Russia (Enterprise Housing Divestiture Project, Energy Efficiency Project) and in other countries of the FSU. Based on this work, a number of generic issues have been identified which tend to be common to most municipal heating systems. These are: (i) high costs of heat delivery, both in absolute terms and relative to the quality of heat supply; (ii) inefficient use of heat at the household level; (iii) nonpayments and customer arrears; and (iv) inadequate tariffs to support either operating costs or investments in system maintenance and rehabilitation.

Further initiatives are needed to address the above issues. While the provision of additional funds for system rehabilitation and upgrading is one aspect of the solution, a number of other actions will be needed in order to ensure that maximum benefits are gained from these investments and that benefits are sustainable over time.

The investments to be financed in each municipality may vary depending on local conditions and needs. Participating cities would be selected based on their willingness to undertake project preparation, and to implement reforms aimed at addressing financial and institutional problems in the municipal heating sector.

A wide range of investments could be made to improve the efficiency and reduce the cost of municipal heat supply. High return investments include automated temperature controls, replacement of leaking pipes, improvements in boiler automation and burners, installation of heat meters, improvement of drainage and ventilation of existing underground ducts to increase the life of piping etc. Options with longer payback periods include installation of preinsulated pipes, replacement of boilers and heat exchangers, variable speed pumps, conversion from open to closed systems, conversions from four pipe secondary system to two pipe system to avoid the application of short-life domestic hot water field piping, installation of sectioning valves to reduce the amount of make up water needed when repairs are made, replacing leaking expansion joints with expansion joints of bellows type etc. Finally, in some cases where loads are inadequate or fuel costs are too high to justify centralized heat supply, investments can be made in upgrading gas distribution systems and installing building-level boilers.

Addressing operational inefficiencies in the municipal heating companies will require a shift in the basic premises under which they are operated, redirecting their mandate from a technical to a commercial focus. Generally, this is best accomplished through private sector participation in the utility's ownership and operations. An interim alternative is to corporatize and restructure the heating company, divesting any functions which are not directly related to its core business or which could be provided by the private sector on a competitive basis, and imposing strict profit accountability and financial discipline (both short term and long term) on its management and employees.

Should it not be feasible to mount a project along these lines in Russia, virtually the whole of East European and Eurasian cities are in a similar situation, and may also need assistance to get through the coming winter.

### **5.3 Rebuilding the Cities of Bosnia and Herzegovina**

Following its declaration of independence from the Socialist Federal Republic of Yugoslavia in March 1992, Bosnia and Herzegovina suffered from a brutal war between the Croat, Muslim, and Serb inhabitants of former Yugoslavia. The war lasted until October 1995, when the Dayton Peace Agreement was reached, leading to an immediate cease-fire.

In December 1995, the parties signed comprehensive Peace Accords in Paris, including a new constitution designed to initiate the reintegration of the country. By providing an institutional framework for the rebuilding of Bosnia and Herzegovina, the agreement opened the door for peace in the country.

A government survey in July of 1995 estimated that 63 percent of housing units have been damaged, and 18 percent destroyed. Some 110,000 people have been reported as living in temporary accommodation. Based on the estimated population of 3.2 million, and a total stock in the order of 1 million dwellings, the probable housing requirements in Bosnia-Herzegovina alone are for repair of up to 600,000 units, and new construction of at least 220,000 units. At a modest average per unit cost of \$5,000 per renovation and of \$45,000 for replacement, the total investment required will be up to \$3 billion for renovation and \$9.9 billion for new construction. The figure of \$13 billion ignores the impacts of ongoing migration and resettlement flowing from the war, population growth, and normal household movement within society.

The war destroyed much of the country's infrastructure and severely disrupted its economic life. In 1991, before independence, Bosnia and Herzegovina had a GDP of US\$8.3 billion with an annual per capita income of US\$1,900 in 1990. By 1995, GDP had plummeted to US\$2 billion with a per capita income of US\$500 (a decline of 80 percent) and an external debt of US\$3.2 billion.

The signing of the Accords has placed economic recovery at center stage. In this endeavor, the people and the government of Bosnia and Herzegovina face the following three major tasks: to undertake an immediate large-scale reconstruction effort to initiate recovery from the damage caused by war. Bridges, road, housing, water and sewerage facilities need to be repaired and public services restored. A viable and efficient government structure for the country needs to be established in order to provide the federation with all the institutional arrangements necessary to initiate the key building blocks for the new state.

The combination of a comprehensive reconstruction program and extensive structural reforms will serve to improve the environment for private sector initiatives.

Significant effort has been invested in initiating a reconstruction program. With the World Bank's assistance, the authorities have designed a three-year reconstruction program which requires a total of about US\$5.1 billion in external funding to support reconstruction in infrastructure, social sectors, and agriculture and industry. Under the leadership of the World Bank and the European Union (EU), a broad coalition of donors has been built, and the first year funding needs of the program US\$1.8 billion have been pledged. Further negotiations are necessary in order for these pledges to materialize into firm commitments to projects and programs.

The World Bank has adopted a two-pronged strategy to support the country's redevelopment. First, without waiting for financial normalization and membership in the Bank, an initial wave of emergency projects was prepared to help jump-start the reconstruction effort. In order to finance these urgently needed projects, a US\$150 million Trust Fund for Bosnia and Herzegovina was set up, funded through the World Bank's surplus account of the International Bank for Reconstruction and Development (IBRD), the World Bank's main lending arm. US\$25 million is being provided to Bosnia as a grant for immediate needs, while the remaining US\$125 million is to be lent on "IDA terms" -- no interest, forty years maturity, and a ten-year grace period.

The first project supported by the Trust Fund, an Emergency Recovery Project, was approved by the Bank's Board in February 1996. It provides financing for critical imports for agriculture, power, and transport; lines of credit for small- and medium-sized enterprises; support for the functioning of key government institutions; and an Emergency Social Fund to provide minimal levels of cash assistance for the poorest households during 1996. The Trust Fund also helped finance six additional projects for transport, water supply, agriculture, district heating, war-victims rehabilitation, and education.

The second prong of the Bank's strategy is designed to provide support to Bosnia and Herzegovina's reconstruction program and systemic transformation to a market economy over the medium term. Given the vast size of reconstruction needs, estimated at \$5.1 billion over the next three to four years, along with Bosnia and Herzegovina's fragile fiscal capacity and limited creditworthiness, the Bank stands ready to provide an exceptional level of IDA support over the fiscal 1996-1999 period, in addition to the resources provided by the Trust Fund. Bank-assisted projects will focus on education, de-mining, power supply, gas, housing, and employment creation, and support economic reforms. Overall, a positive net transfer of approximately US\$450 million from the Bank to Bosnia and Herzegovina is expected in the next four years.

#### **5.4 Meeting Urban Housing and Community Services Needs in Guatemala**

The Guatemala Peace Accords go well beyond a military solution to provide a framework for the integrated social and economic development of the people of Guatemala. In their efforts, Guatemala has assistance from the international community. Canada is supporting the Guatemala peace process, by assisting Guatemala to make a peaceful transition to an open society in which human rights are respected and the Government of Guatemala is better able to satisfy the needs of its citizens through equitable development.

Among the responses to needs which Canadians can make, according to contacts with the mission in Guatemala City, is low-cost housing development. The Peace Accord specifically includes investment in housing as a commitment of the Guatemalan government, and calls for it to devote no less than 1.5% of tax revenues for housing from 1997.

Currently there are over 205 "squatter settlements" in Guatemala City alone. In addition to migrants, there are a large number of urban dwellers who formerly lived in other parts of the metropolitan area, but have now reached a point in which they can no longer pay rent and have had to join the squatters on the marginalized outskirts of the city. A 1994 study estimated that 1,000 people were emigrating each day to Guatemala City due to the country's economic crisis and social injustice. According to the Guatemala City Mayor, half of the city's 3 million residents lived in extreme poverty. In the many squatter camps, tensions born of poverty and corruption have already escalated to renewed violence and created a climate of fear of crime.

Current housing technologies based on masonry methods appear to have serious limitations of cost, speed, quality and environmental impacts. Alternatives based on more effective use of local labour and materials coupled with advanced technologies and training need to be tested under real-life conditions, and then diffused to the Guatemalan building industry and to communities using self-help methods. Innovation also appears to be required in providing site services to existing residential areas. New technologies developed in communities around North America now offer the hope of better environmental performance at considerably lower cost than "conventional" urban services found across the hemisphere.

#### **5.5 Urban Reconstruction and Peacebuilding in Rwanda**

For the first time in Rwanda's 35 years of national independence, the overwhelming majority of Rwandan refugees, Hutu and Tutsi, have returned to their homeland. The nearly two million Hutu refugees who fled in 1994 - the fastest refugee exodus of its size the world has ever witnessed - are being asked to resume their former lives.

It is hoped that the abrupt repatriation of most refugees in late 1996 - a massive return of unprecedented suddenness - will produce "social reintegration".

Rwandans have constructed or rehabilitated more than 100,000 homes with international assistance. Rwandan government officials estimate that 400,000 homes - about one fourth of the country's housing stock - need construction or repair to accommodate returned Hutu and Tutsi refugees and genocide survivors.

Large numbers of returnees to Rwanda, many lacking their own property, are settling into designated resettlement sites, particularly in the eastern half of the country. Some sites are poorly planned and may not be viable, potentially leading to new hardships, population migrations, and wasted aid dollars. Authorities should work with UN technicians to monitor the success or failure of newly built housing sites and to conduct thorough analyses of proposed housing projects.

## 6. CONCLUSIONS

The main conclusions from the review of additional potential cities are set out in the chart below.

DECISION FACTOR	CITIES LIKELY AFFECTED	COMMENTS
Relation of suspension of new Canadian development assistance for India	New Delhi, Mumbai, Bangalore	The larger cities of India will be very challenging. Perhaps smaller centres would be a better place to start.
Determination to revive the East Asian economies through urban infrastructure projects; recovery of East Asian economies	Jakarta, Manila, Cebu City	The Philippines is welcoming PPI projects.
Improved financing and risk management mechanisms for projects in Africa	South African cities; cities of Tanzania and francophone Africa, e.g, Cote d'Ivoire	South Africa seems to be the most opportune next place because of its active urban strategy.
Selection of cities by the World Bank Urban Partnership or other International Financial Institutions	Bogota, Colombia	Canada already has a major initiative funded by CIDA in Bogota.
Determination to move beyond capital cities in targeting Canadian assistance	Cebu City, Maquiladora cities, cities in Czech Republic in which Federation of Canadian Municipalities is operating	In general, CIDA officials believe there are more and better opportunities in cities outside the capitals
Canadian economic interests in the Caribbean region	Port-au-Prince, Georgetown, Kingston	There are potentially strong links with Canadian company interests here.
Canadian economic interests and trade ties with Latin America	Mexico City, Sao Paulo, Rio de Janiero, Curitiba, Cordoba	Some advisors strongly recommend the "second-tier" cities in Latin America
Prime Minister's mission to Russia, Ukraine and Poland	Moscow region cities, Kiev, cities in Poland beyond Katowice	There is very limited time to do more than build on existing projects, e.g., CIDA housing projects in Russia.
Initiatives by individual Canadian organizations and companies	Beijing (AGRA); many other possibilities	It is essential now to find out where major Canadian companies are interested in going.

DECISION FACTOR	CITIES LIKELY AFFECTED	COMMENTS
Twinning relationships with between Canadian cities and global cities	Many cities, depending on practical follow-up opportunities	Twinning arrangements are best as a complement to other interests, rather than a driver
Links to foreign policy goals such as reconstruction and peacebuilding	Cities in former Yugoslavia, Rwanda, Guatemala	Operating conditions for urban reconstruction may still be too difficult in some cities as this stage.
Emergency response to urban environmental catastrophe	Nicaragua, Honduras	Operating conditions for urban reconstruction may still be too difficult in some cities as this stage.
Contribution to greenhouse gas reduction strategy	Most cities in China, India, Eastern Europe	It is essential to market sustainable cities as being concerned primarily with <i>local air quality improvement</i> , but this can be linked to global climate change results as well.

**ANNEX: GLOBAL URBAN REGIONS WITH AT LEAST ONE CANADIAN ENVIRONMENTAL PROJECT**

URBAN REGION (IN ALPHABETICAL ORDER)	NO. OF PROJ.	COMMER- CIAL	RE- SEARCH	UNIV. LINKAGE	MUNIC. LINKAGE	DEVELOP- MENT
1. Addis Ababa, Ethiopia	1					X
2. Ahmedabad, India	1			X		
3. Amman, Jordan	1		X			
4. Bacolod City, The Philippines	1				X	
5. Bangalore, India	2	X		X		
6. Bangui, Central African Republic	1					X
7. Barranquilla, Colombia	2		X			X
8. Batanagas, The Philippines	1	X				
9. Bellville, South Africa	2		X	X		
10. Belo Horizonte, Brazil	2	XX				
11. Ben Slimane, Morocco	1					X
12. Berkane, Morocco	1					X
13. Bocaue, The Philippines	1	X				
14. Bogor, Indonesia	2	XX				
15. Cairo, Egypt	1			X		
16. Calcutta, India	1	X				
17. Cali, Colombia	1					X
18. Cape Town, South Africa	2					XX
19. Cesky Krumlov, Czech Republic	1				X	
20. Chenzhou, China	1					X
21. Chiang Mai, Thailand	1				X	
22. Ciudad de Soyapango, El Salvador	1				X	
23. Cochabamba, Bolivia	2			XX		
24. Coimbatore, India	1	X				
25. Concepcion, Chile	1					X
26. Contagen, Minas Gerais, Brazil	1	X				
27. Cotonou, Benin	2					XX
28. Curitiba, Brazil	2			X		X
29. Dalian, China	1					X
30. Danang, Vietnam	1					X

## GLOBAL URBAN REGIONS WITH AT LEAST ONE CANADIAN ENVIRONMENTAL PROJECT

URBAN REGION (IN ALPHABETICAL ORDER)	NO. OF PROJ.	COMMER- CIAL	RE- SEARCH	UNIV. LINKAGE	MUNIC. LINKAGE	DEVELOP- MENT
31. Davao, The Philippines	1					X
32. Delhi, India	1	X				
33. Dhaka, Bangladesh	1			X		
34. Durban, South Africa	1					X
35. East London, South Africa	2				XX	
36. Eastern Cape, South Africa	1			X		
37. Faridabad, India	1	X				
38. Gandhinagar, India	1	X				
39. Gao, Mali	1					X
40. Gaza/West Bank, Palestinian Authority	2					XX
41. Gtirama, Rwanda	1					X
42. Grati, Indonesia	1	X				
43. Guatemala City, Guatemala	2					XX
44. Haiphong, Vietnam	1					X
45. Harare, Zimbabwe	1					X
46. Harbin, China	1					X
47. Hemeraje, Thailand	1	X				
48. Hermosillo, Mexico	1	X				
49. Hyderabad, India	1	X				
50. Ibadan, Nigeria	1					X
51. Ibarra, Ecuador	1					X
52. Ismailia, Egypt	1					X
53. Ixcan/Sierra, Guatemala	1					X
54. Jeremie, Haiti	1					X
55. Jinan, China	1				X	
56. Johannesburg, South Africa	2					XX
57. Kampala, Uganda	2		XX			
58. Karachi, Pakistan	2	X		X		
59. Kataayi, Uganda	1					X
60. Kerala State, India	1	X				

## GLOBAL URBAN REGIONS WITH AT LEAST ONE CANADIAN ENVIRONMENTAL PROJECT

URBAN REGION (IN ALPHABETICAL ORDER)	NO. OF PROJ.	COMMER- CIAL	RE- SEARCH	UNIV. LINKAGE	MUNIC. LINKAGE	DEVELOP- MENT
61. Kibungo, Rwanda	1					X
62. Kingston, Jamaica	1					X
63. Kuala Lumpur, Malaysia	1	X				
64. Kyung Ki-do, Republic of South Korea	1	X				
65. La Mercy, South Africa	1	X				
66. La Paz, Bolivia	2			X		X
67. Lahore, Pakistan	2	XX				
68. Lanzhou, China	1					X
69. Luanda, Angola	1					X
70. Lusaka, Zambia	1					X
71. Machala, Ecuador	1		X			
72. Maputo, Mozambique	1					X
73. Medellín, Columbia	1					X
74. Montevideo, Uruguay	2		X			X
75. Mopti, Mali	1					X
76. Muntinlupa, The Philippines	1	X				
77. Murambi, Rwanda	1					X
78. Mutare, Zimbabwe	1				X	
79. Nampula, Mozambique	1					X
80. Nanjiang, China	1		X			
81. Natal, Brazil	1					X
82. Niamey, Niger	2			X		X
83. Ningbo, China	1	X				
84. Nonthaburi, Thailand	1				X	
85. Oaxaca, Mexico	1	X				
86. Ostrava, Czech Republic	1				X	
87. Pasos, Honduras	1					X
88. Phnom Penh, Cambodia	1			X		
89. Phuket, Thailand	1					X
90. Port-Bouët, Ivory Coast	1				X	

**GLOBAL URBAN REGIONS WITH AT LEAST ONE CANADIAN ENVIRONMENTAL PROJECT**

URBAN REGION (IN ALPHABETICAL ORDER)	NO. OF PROJ.	COMMER- CIAL	RE- SEARCH	UNIV. LINKAGE	MUNIC. LINKAGE	DEVELOP- MENT
91. Porto Alegre, Brazil	2					XX
92. Porto Novo, Benin	1					X
93. Prerov, Czech Republic	1				X	
94. Pt. Hendratna, Indonesia	1	X				
95. Puebla de Zaragoza, Mexico	1			X		
96. Pune, India	1	X				
97. Qingdo, China	1		X			
98. Rabat, Morocco	1		X			
99. Rafah, Palestine	1				X	
100. Recife, Brazil	1					X
101. Rukara, Rwanda	1					X
102. Ryazan, Russia	1					X
103. San Jose, Costa Rica	1			X		
104. San Luis Potosi, Mexico	2	XX				
105. Santa Fe de Bogota, Columbia	1			X		
106. Santa Marta, Columbia	1	X				
107. Santo-Domingo, Dominican Republic	1					X
108. Sarajevo, Bosnia-Herzegovina	1					X
109. Shenyang, China	1		X			
110. Sichuan Province, China	2	X		X		
111. Somoto, Nicaragua	1					X
112. Song Be, Vietnam	1	X				
113. Spisska, Slovakia	1	X				
114. St. Augustine, Trinidad	1			X		
115. St. Petersburg, Russia	2	X				X
116. Sucre, Bolivia	1					X
117. Sumperk, Czech Republic	1				X	
118. Surabaya, Indonesia	2	XX				
119. Temuco, Chile	1	X				
120. Tunis, Tunisia	1		X			

**GLOBAL URBAN REGIONS WITH AT LEAST ONE CANADIAN ENVIRONMENTAL PROJECT**

URBAN REGION (IN ALPHABETICAL ORDER)	NO. OF PROJ.	COMMER- CIAL	RE- SEARCH	UNIV. LINKAGE	MUNIC. LINKAGE	DEVELOP- MENT
121. Ujing Pandang, Indonesia	2			X		X
122. Ulsan, Republic of Korea	1	X				
123. Umutara, Rwanda	2	X				X
124. Valparaiso, Chile	1	X				
125. Vilnius, Lithuania	2			X		X
126. Warsak, Pakistan	1	X				
127. Windhoek, Namibia	1				X	
128. Witwatersrand, South Africa	1		X			
129. Wuhan, China	1		X			
130. Wuxi, China	1	X				
131. Yakutsk, Russia	1	X				
132. Yanji, China	1					X
133. Yaounde, Cameroon	1					X
134. Zaporizhzhia, Ukraine	1					X
135. Zlin, Czech Republic	1				X	