Global City Indicators Facility

University of Toronto
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The Comparative Genetics of Cities Workshop

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London

Global City Indicators

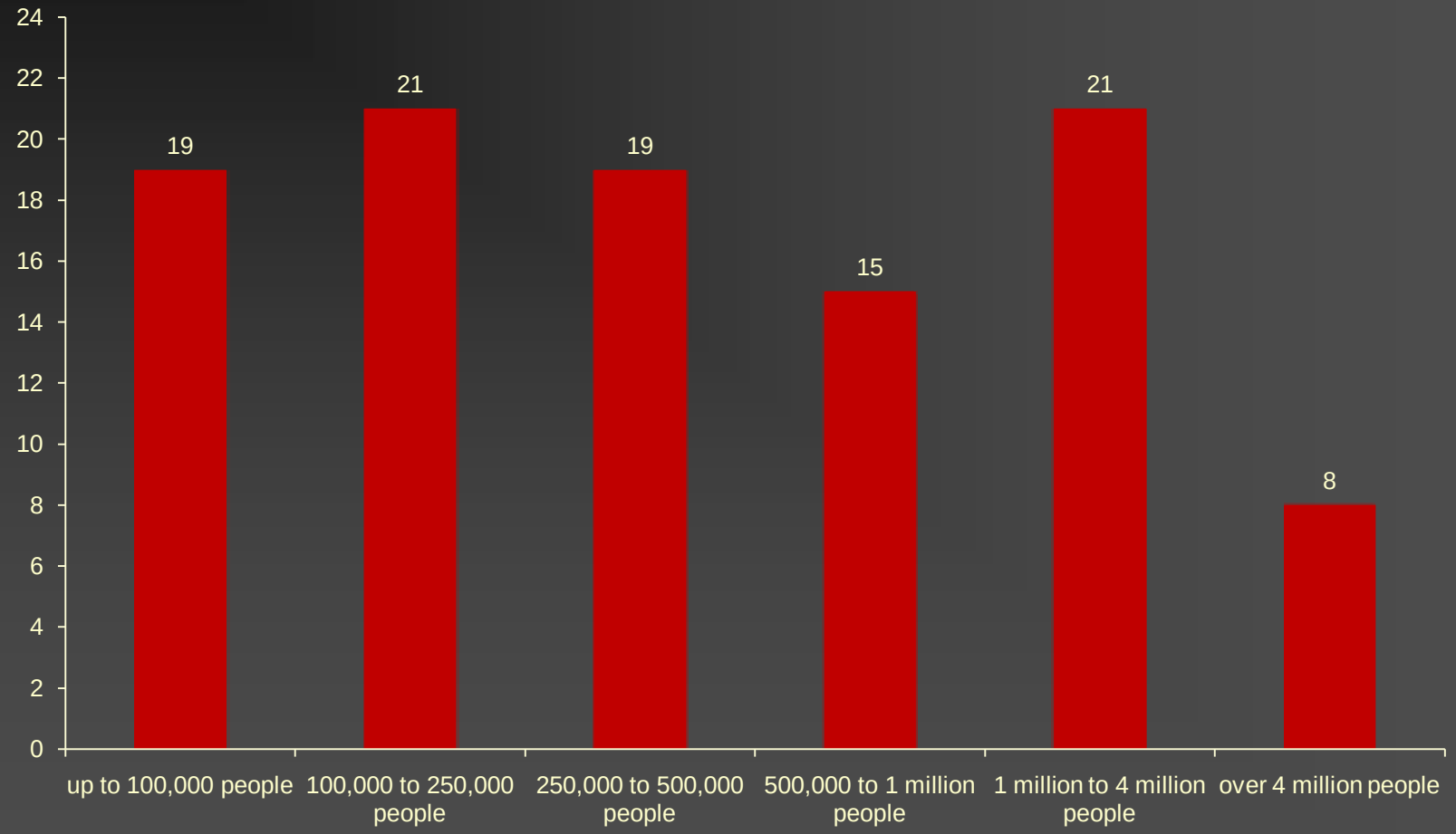
Facility

Map of GCIF Member Cities
103 members as of May 19th 2010

GCIF Members

Abuja, Nigeria
Aguascalientes, Mexico
Al-Janūbīyah [Southern Governorate], Bahrain
Al-Manāmah [Capital Governorate], Bahrain
Al-Muḥarraq [Muharraq Governorate], Bahrain
Al-Wusṭā [Central Governorate], Bahrain
Amman, Jordan
Antipolo, Philippines
Ash-Shamālīyah [Northern Governorate], Bahrain
Baguio, Philippines
Balanga, Philippines
Basrah, Iraq
Bayawan, Philippines
Belo Horizonte, Brazil
Betim, Brazil
Bogor, Indonesia
Bogotá, Colombia
Bucaramanga, Colombia
Calbayog, Philippines
Cali, Colombia
Cape Town, South Africa
Cauayan, Philippines
Clarington, Canada
Colombo, Sri Lanka
Cotabato, Philippines
Culiacan, Mexico
Dallas, United States
Dapitan, Philippines
Dar es Salaam, Tanzania
Darkhan, Mongolia
Dhaka, Bangladesh
Dipolog, Philippines
Dubai, United Arab Emirates
Durban, South Africa
Escalante, Philippines
Florianopolis, Brazil
Fort Worth, United States
Guadalupe, Mexico
Hai Phong, Vietnam
Ile de France, France
Isulan, Philippines
Jakarta, Indonesia
Johannesburg, South Africa
Kabankalan, Philippines
Kabul, Afghanistan
Kathmandu, Nepal
King County, United States
Laoag, Philippines
Ligao, Philippines
Makati, Philippines
Malabon, Philippines
Mandaluyong, Philippines
Mandaue City, Philippines
Mandlakazi, Mozambique
Marikina, Philippines
Markham, Canada
Masbate, Philippines
Milan, Italy
Minna, Nigeria
Monrovia, Liberia
Montreal, Canada
Mumbai, India
Munoz, Philippines
Naihati, India
Naivasha, Kenya
Nashville and Davidson, United States
Olongapo, Philippines
Oroquieta, Philippines
Palayan, Philippines
Passi, Philippines
Peoria, United States
Phnom Penh, Cambodia
Porto Alegre, Brazil
Puerto Princesa, Philippines
Quezon, Philippines
Richmond Hill, Canada
Roxas, Philippines
Saanich, Canada
San Fernando, Philippines
San Jose Del Monte, Philippines
San Pablo, Philippines
San Salvador, El Salvador
Santiago, Chile
Sao Bernardo do Campo, Brazil
Sao Paulo, Brazil
St Catharines, Canada
St Johns, Canada
Surigao, Philippines
Surrey, Canada
Tabaco, Philippines
Tacurong, Philippines
Tagaytay, Philippines
Tarlac, Philippines
Tehran, Iran
Toledo, Philippines
Toronto, Canada
Tuguegarao, Philippines
Valparaiso, Chile
Vancouver, Canada
Victoria, Canada
Vigan, Philippines
Zamboanga, Philippines
Zapopan, Mexico

City Membership by Population Category

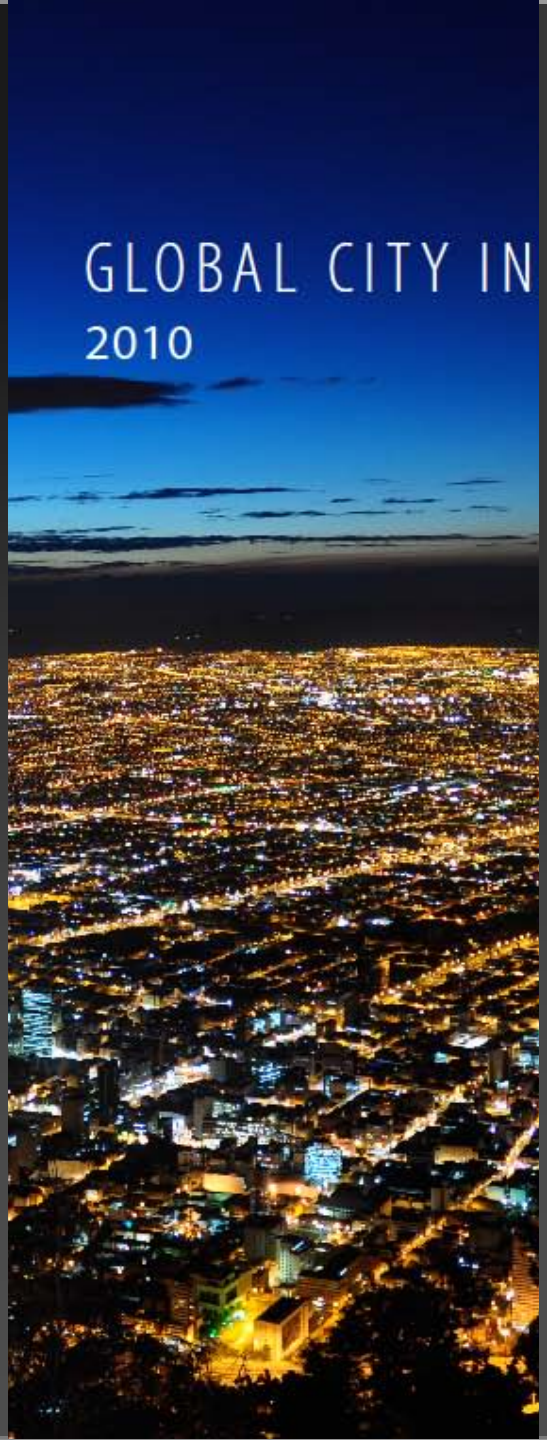


City Services

- Education
- Finance
- Governance
- Recreation
- Social Services
- Transportation
- Wastewater
- Energy
- Fire and Emergency Services
- Health
- Safety
- Solid waste
- Urban Planning
- Water

Quality of Life

- Civic Engagement
- Economy
- Shelter
- Culture
- Culture
- Environment
- Social Equity
- Technology and Innovation


GLOBAL CITY IN
2010

Toronto

Population: 2,724,500 • Country: Canada • Land area: 634 km²

Toronto is the capital of the Province of Ontario, Canada's largest urban centre and is the recognized hub of the nation's cultural, commercial and financial activities. Toronto is the fifth largest City in North America. It is one of the most culturally diverse cities on the globe, as more than half of Toronto's citizens were born outside of Canada, over 152 languages and dialects are spoken, and approximately 43 percent of Torontonians belong to visible minority groups. Toronto is part of a densely populated region known as the Greater Golden Horseshoe, home to 8.1 million residents or approximately 25 percent of Canada's population, producing motor vehicles, iron, steel, food, machinery, chemicals and paper. Toronto is a major international centre for business and finance. Considered the financial capital of Canada, Toronto has a high concentration of banks and brokerage firms. The Toronto Stock Exchange is the world's seventh largest exchange by market capitalization. The five largest banks of Canada are headquartered in Toronto, as are a majority of Canada's corporations. The City is an important centre for the media, publishing, telecommunications, information technology and film production industries.

EDUCATION, TECHNOLOGY & INNOVATION

Education

Student/teacher ratio	15.61
% of children completing primary & secondary ed.	88.95
% of students completing primary education	100.00
% of students completing secondary education	76.53
% of school-aged children enrolled in schools	82.32
% of male children enrolled in schools	82.48
% of female children enrolled in schools	82.16

Technology & Innovation

No. of internet connections per 100,000 pop.	33,367
No. of new patents per 100,000 per year	33.99
No. of higher education degrees per 100,000 pop.	41,759.22
No. of telephones (landlines & cell) per 100,000 pop.	107,634.17
No. of landline phone connections per 100,000 pop.	58,540
No. of cell phone connections per 100,000 pop.	49,095

HEALTH, SAFETY & EMERGENCY

Health

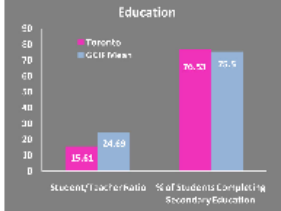
No. of in-patient hospital beds per 100,000 pop.	340.74
No. of physicians per 100,000 pop.	104.86
No. of nursing/midwifery personnel per 100,000 pop.	1,007.89
Average life expectancy	80.6
Under age five mortality per 1,000 live births	7.41

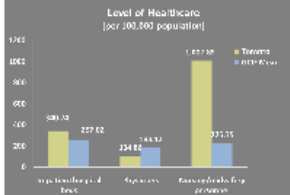
Safety

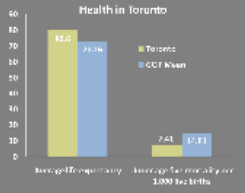
No. of police officers per 100,000 population	200.84
No. of homicides per 100,000 population	2.56
Violent crime rate per 100,000 population	412.01

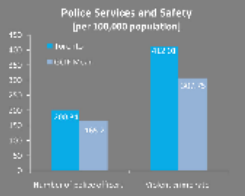
Fire & Emergency

No. of firefighters per 100,000 population	101.57
No. of fire related deaths per 100,000 population	0.62
Response time for fire department [minutes]	7.31









Sustainability Indicators

Theme	Core Indicator	Supporting Indicator
City Services		
Energy	Percentage of city population with authorized electrical service	Total electrical use per capita (kilowatt/hr)
	Total residential electrical use per capita	The average number of electrical interruptions per customer per year
		Average length of electrical interruptions (in hours)
Health	Average life expectancy	
	Under age five mortality per 1,000 live births	
Recreation		Square metres of public indoor recreation facility space per capita
		Square metres of public outdoor recreation facility space per capita
Solid waste	Percentage of city population with regular solid waste collection	Percentage of the city's solid waste that is disposed of in an incinerator
	Percentage of city's solid waste that is recycled	Percentage of the city's solid waste that is burned openly
		Percentage of the city's solid waste that is disposed of in an open dump
		Percentage of the city's solid waste that is disposed of in an sanitary landfill
		Percentage of the city's solid waste that is disposed of by other means

Theme	Core Indicator	Supporting Indicator
Transportation	Km of high capacity public transit system per 100,000 population	Number of two-wheel motorized vehicles per capita
	Km of light passenger transit system per 100,000 population	Commercial Air Connectivity (number of nonstop commercial air destinations)
	Number of personal automobiles per capita	Transportation fatalities per 100,000 population
	Annual number of public transit trips per capita	
Urban Planning	Jobs/Housing ratio	Areal size of informal settlements as a percent of city area
		Green area (hectares) per 100,000 population
Wastewater	Percentage of city population served by wastewater collection	Percentage of the city's wastewater receiving primary treatment
	Percentage of the city's wastewater that has received no treatment	Percentage of the city's wastewater receiving secondary treatment
		Percentage of the city's wastewater receiving tertiary treatment
Water	Percentage of city population with potable water supply service	Total water consumption per capita
	Domestic water consumption per capita	Percentage of water loss
	Percentage of city population with sustainable access to an improved water source	Average annual hours of water service interruption per household
Environment	PM10 concentration	Greenhouse gas emissions measured in tonnes per capita
Shelter	Percentage of city population living in slums	Number of households that exist without registered legal titles
		Number of homeless people per 100,000 population
Social Equity		Percentage of city population living in poverty
Technology	Number of internet connections per 100,000 population	Number of telephones (landlines and cell phones) per 100,000 population
		Number of new patents per 100,000 per year
		Number of higher education degrees per 100,000

Future Indices

Theme	Future Index
Economy	Competitiveness Index
Energy	Total Energy Use Index
Environment	Greenhouse Gas Index
Governance	Governance Index
Recreation and Culture	Recreation and Culture Index
Social Equity	Social Capital Index
Subjective Well-Being	Subjective Well-Being Index
Transportation	Urban Accessibility Index
Technology	Creativity Index
Water	Water Quality Index

FUTURE POTENTIALS EMERGING IN THE GCIF INDICATORS DATABASE

Cities as Engines of Growth

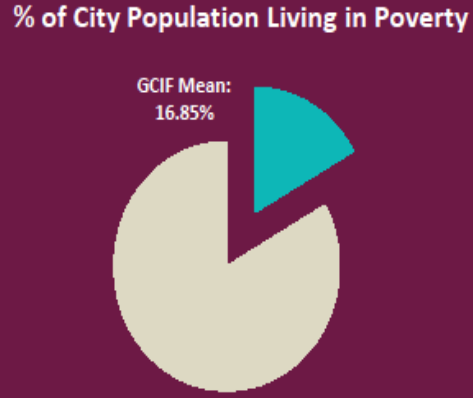
How much do cities contribute to their nations' wealth?

11 GCIF cities represent higher proportions of their nation's GDP than their proportion of their nation's population suggests.

Cities and Poverty

Despite their role as key drivers of their nations' economies, some of these cities report over 10 percent of their city population living in poverty. Three of these cities (graph to the left) for example report poverty at 25.4%, 27.2% and 11.01%.

The GCIF mean for the percentage of the city population living in poverty is 16.85 percent. The importance of tracking these trends is critical if cities are to continue to contribute to their nation's economy into the future.



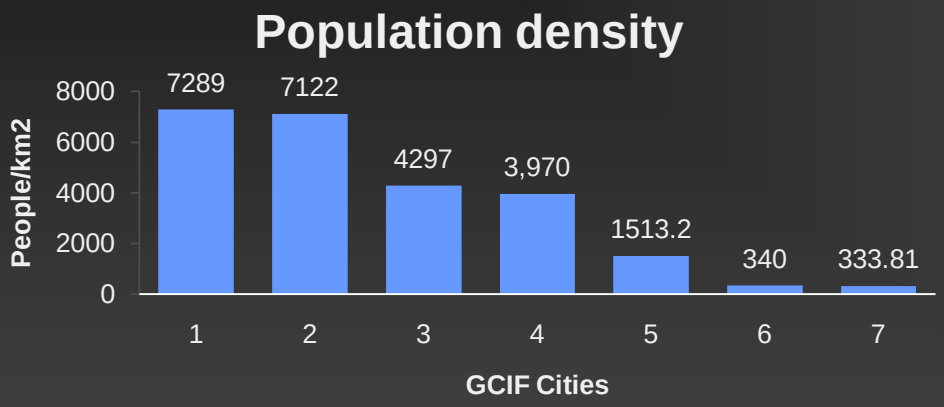
CITIES AND ENVIRONMENTAL SUSTAINABILITY

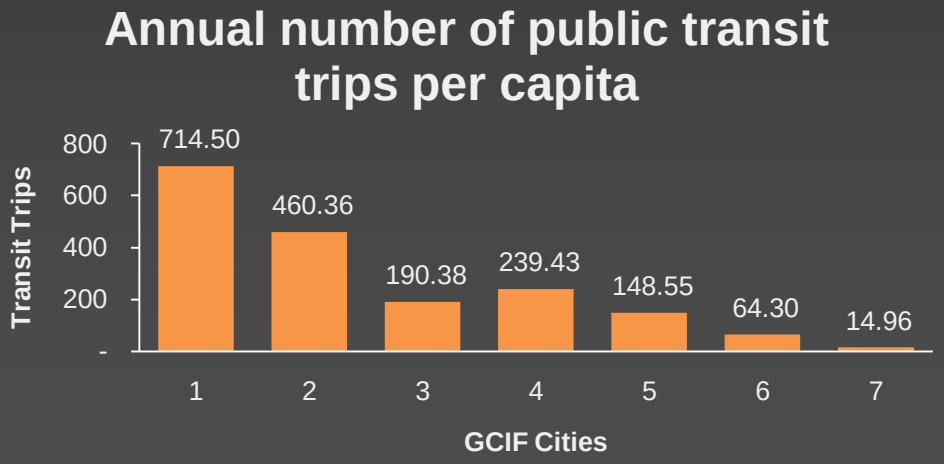
A cluster of GCIF indicators including those that measure temperature and precipitation changes, transportation patterns, energy usage, water usage, waste water management, solid waste management, air quality, Greenhouse Gas emissions, green space, land use and density help to improve overall understanding of cities' environmental impact and direct climate change adaptation and mitigation strategies at the city level. Over time, this cluster of sustainability indicators will be a valuable tool for measuring the impact of climate change on cities as well as progress toward global urban sustainability goals.

GCIF Member City Means:	
Population Density [per km2]	4,080.90
Green area per 100,000 population [ha]	1,272.08
GHG Emissions [tonnes per capita]	5.86
Number of personal automobiles per capita	0.25
Annual number of public transit trips per capita	261.78

GCIF Member City Means:	
Total residential electrical use per capita [kW]	3,800.77
Domestic water consumption per capita [litres/day]	197.69
% of wastewater that has received no treatment	13.66%
% of solid waste that is recycled	25.59%

Does a city's population density impact its transit use per capita?





Factors to Consider in Reviewing Results:

Informal transit

Income levels

Type and service level of public transit

Quality of roads

Quality of alternatives (bike paths, walking routes)

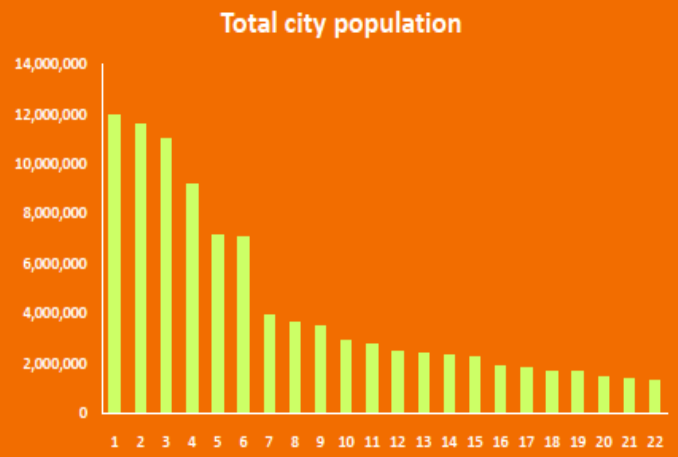
FUTURE POTENTIALS EMERGING IN THE GCIF INDICATORS DATABASE

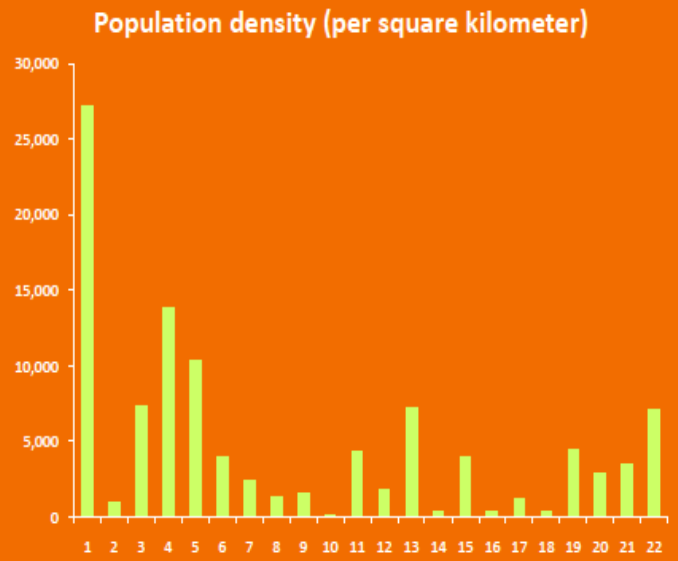
Do cities with the largest populations also have the highest densities?

Mumbai
Population: 11,978,450
Population density/km^2: 27,209
Land Area: 437.71

Sao Paulo
Population: 10,998,813
Population density/km^2: 7,289
Land Area: 1,509

GCIF Cities over 1 million population





Seattle: WHY GCIF?
Connecting with other jurisdictions

- Data only tell part of the story, need to connect with other people to learn *why* and *how*
- Global City Indicator Facility is designed to help make those connections
- The GCIF serves as a gateway to exchange information and training with other participating municipalities

Source: From Seattle presentation in Rio at World Urban Forum

From Indicators to Governance
Case Studies

- Bogota
  - Secretariat of Finance utilizes GCIP Indicators and comparative reports to:
    - Monitor investments and evaluate their performance
    - Use other member cities' performance as benchmarks in measuring Bogota's performance
    - Inform effective evidence-based decision making during budget negotiations

Benefits for Sao Paulo in being a GCIF member

- We already collect the indicators
- There was not a wide indicators platform for cities
- Comparsion helps government and civil society evaluate public policy and our performance
- Effort to provide evidence based policy and decision making based on indicators

Source: From Sao Paulo presentation in Rio at World Urban Forum

The Challenge

- City leaders are not at the table when international protocols and agreements on climate change are discussed by member states and when states decide on whether to sign and support these international agreements
- The vulnerability of cities to climate change risks is largely underestimated. There is no established set of city indicators on climate change that is globally standardized and comparable.
- With increasing urban vulnerability however, estimated simply by the fact of the increasing dominance of city dwellers worldwide, city governments need to be considered as new sites of governance in global negotiations on climate change and in decision-making related to risk assessments.
- Comparative city data engenders a critical voice for cities in global dialogues and national policy development

Research Objectives

1. To map core risks for cities associated with CC through literature review and city case studies
2. To examine the use of city indicators to assess and address risks and vulnerabilities in cities
3. To determine how knowledge derived from city indicators on CC can help to direct a more informed set of planning norms and practices, more effective infrastructure investment and urban management, and a more empowered and inclusive urban governance

Conclusion

- Indicators on cities and climate change add new policy leverage for local governments
  - Building empowered decision-making in this volatile policy field
  - Leveraging funding/budget support for climate action
  - In developing evidence-based policy-making
  - In building strong city governments capable of performing as new sites of governance in global negotiations on climate change
  - In decision-making related to risk assessments

CONTACT US

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GCIF Indicators

Theme	Core Indicator	Supporting Indicator
City Services		
Education	Student/teacher ratio	Percentage of school-aged children enrolled in schools by gender
	Percentage of children completing primary and secondary education: survival rate	
Energy	Percentage of city population with authorized electrical service	Total electrical use per capita (kilowatt/hr)
	Total residential electrical use per capita	The average number of electrical interruptions per customer per year
		Average length of electrical interruptions (in hours)
Finance	Debt service ratio (debt service expenditure as a percent of a municipality's own-source revenue)	Tax collected as percentage of tax billed
		Own-source revenue as a percentage of total revenues
		Capital spending as a percentage of total expenditures
Fire and Emergency Response	Number of firefighters per 100,000 population	Response time for fire department from initial call
	Number of fire related deaths per 100,000 population	
Governance		Percentage of women employed in the city government workforce
Health	Number of in-patient hospital beds per 100,000 population	Number of nursing and midwifery personnel per 100,000 population
	Number of physicians per 100,000 population	
	Average life expectancy	
	Under age five mortality per 1,000 live births	
Recreation		Square metres of public indoor recreation facility space per capita
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Safety	Number of police officers per 100,000 population	Violent crime rate per 100,000 population
	Number of homicides per 100,000 population	
Solid waste	Percentage of city population with regular solid waste collection	Percentage of the city's solid waste that is disposed of in an incinerator
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GCIF Indicators Continued

Transportation	Km of high capacity public transit system per 100,000 population	Number of two-wheel motorized vehicles per capita
	Km of light passenger transit system per 100,000 population	Commercial Air Connectivity (number of nonstop commercial air destinations)
	Number of personal automobiles per capita	Transportation fatalities per 100,000 population
	Annual number of public transit trips per capita	
Urban Planning	Jobs/Housing ratio	Areal size of informal settlements as a percent of city area
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Water	Percentage of city population with potable water supply service	Total water consumption per capita
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	Percentage of city population with sustainable access to an improved water source	Average annual hours of water service interruption per household
Quality of Life		
Civic Engagement	Voter participation in last municipal election (as a percent of eligible voters)	Citizen's representation: number of local officials elected to office per 100,000 population
Culture		Percentage of jobs in the cultural sector
Economy	City product per capita	Percentage of persons in full time employment
	City unemployment rate (from profile page)	
Environment	PM10 concentration	Greenhouse gas emissions measured in tonnes per capita
Shelter	Percentage of city population living in slums	Number of households that exist without registered legal titles
		Number of homeless people per 100,000 population
Social Equity		Percentage of city population living in poverty
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