CityLinks Webinar

Urban Intersections: Climate Change and Food Security

June 16, 2015

ICMA Leaders at the Core of Better Communities

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ICMA, 16 June 2015

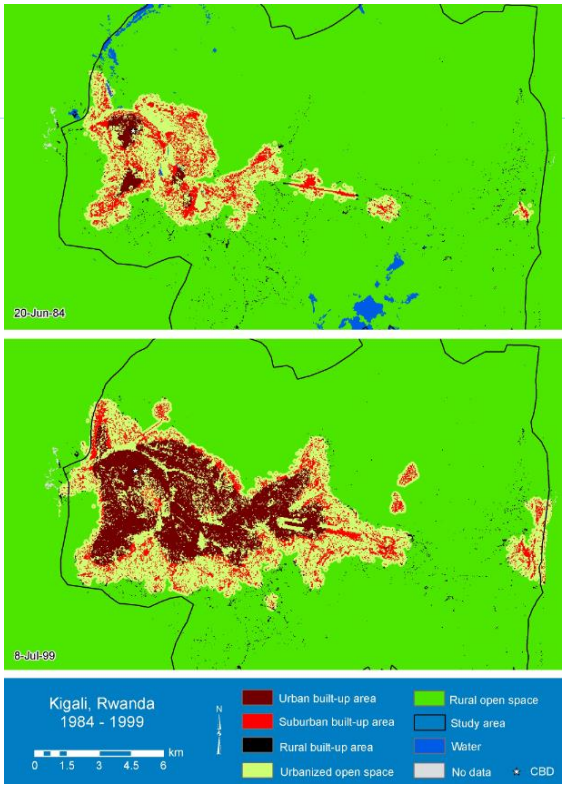
UN HABITAT
FOR A BETTER URBAN FUTURE

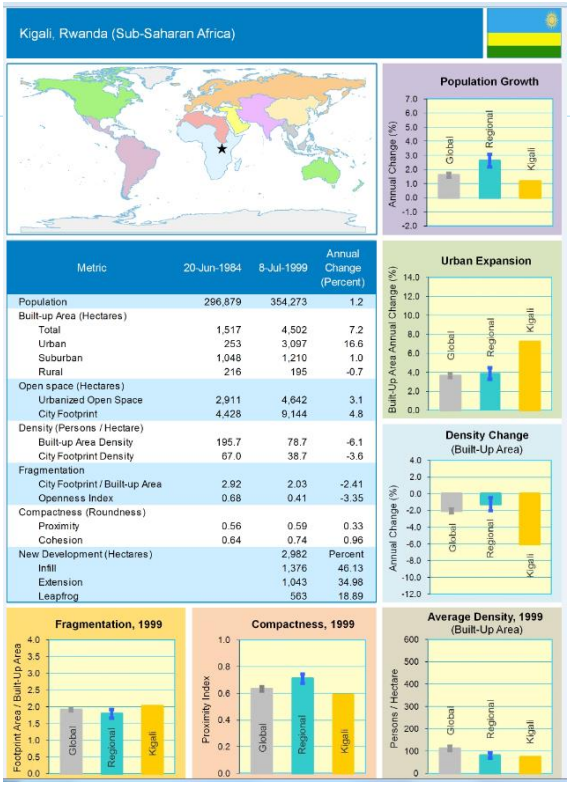
Rafael Tuts, Coordinator, Urban Planning and Design Branch

Integrated planning and management strategies for urban food security and climate change adaptation

Overview

- Key facts and figures
- Responses at different geographic scale levels
- Urban-rural linkages in the post-2015 development agenda and GC 25
- Towards a new urban agenda at Habitat III in 2016

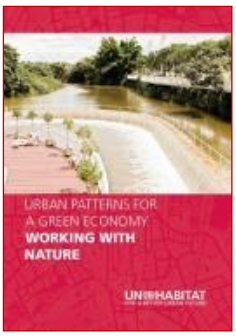


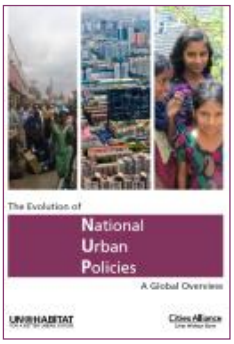


Metric	20-Jun-1984	8-Jul-1999	Annual Change (Percent)
Population	296,879	354,273	1.2
Built-up Area (Hectares)			
Total	1,517	4,502	7.2
Urban	253	3,097	16.6
Suburban	1,048	1,210	1.0
Rural	216	195	-0.7
Open space (Hectares)			
Urbanized Open Space	2,911	4,642	3.1
City Footprint	4,428	9,144	4.8
Density (Persons / Hectare)			
Built-up Area Density	195.7	78.7	-6.1
City Footprint Density	67.0	38.7	-3.6
Fragmentation			
City Footprint / Built-up Area	2.92	2.03	-2.41
Openness Index	0.68	0.41	-3.35
Compactness (Roundness)			
Proximity	0.56	0.59	0.33
Cohesion	0.64	0.74	0.96
New Development (Hectares)		2,982	Percent
Infill		1,376	46.13
Extension		1,043	34.98
Leapfrog		563	18.89

Responses at different geographic scale levels

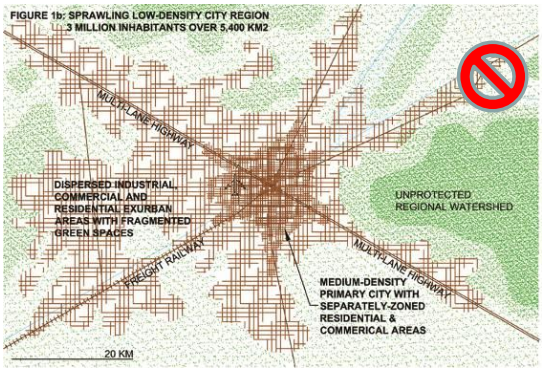
- Sustainable expansion of urban systems
- Role of national urban policies
- Working with nature
- Intermediate cities and market towns
- Land use planning and tenure security
- Legislation and governance
- Pro-poor and gender-sensitive approaches

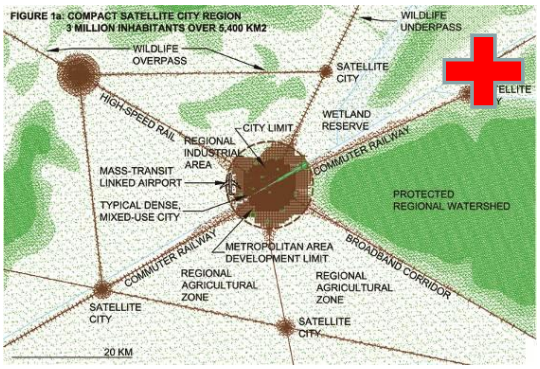




Planning at the City-Region Level

- Plan for land mosaic patterns that promote sustainable development
- Protect valuable ecosystems and biodiversity hotspots
- Preserve natural corridors preventing flooding and landslides
- Plan for agriculture as a key land use feature in the city region
- Optimize and expand existing network infrastructure
- Promote compact cities and planned extensions
- Construct built environment that uses water and energy efficiently





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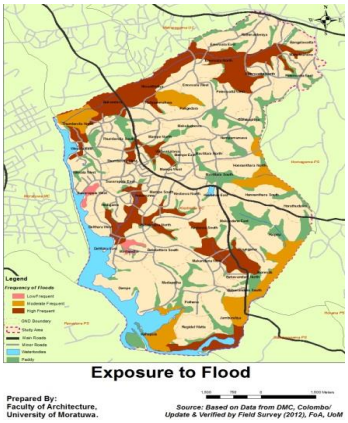
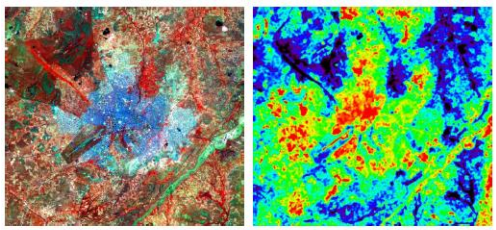
Multi-scalar action on urban agriculture

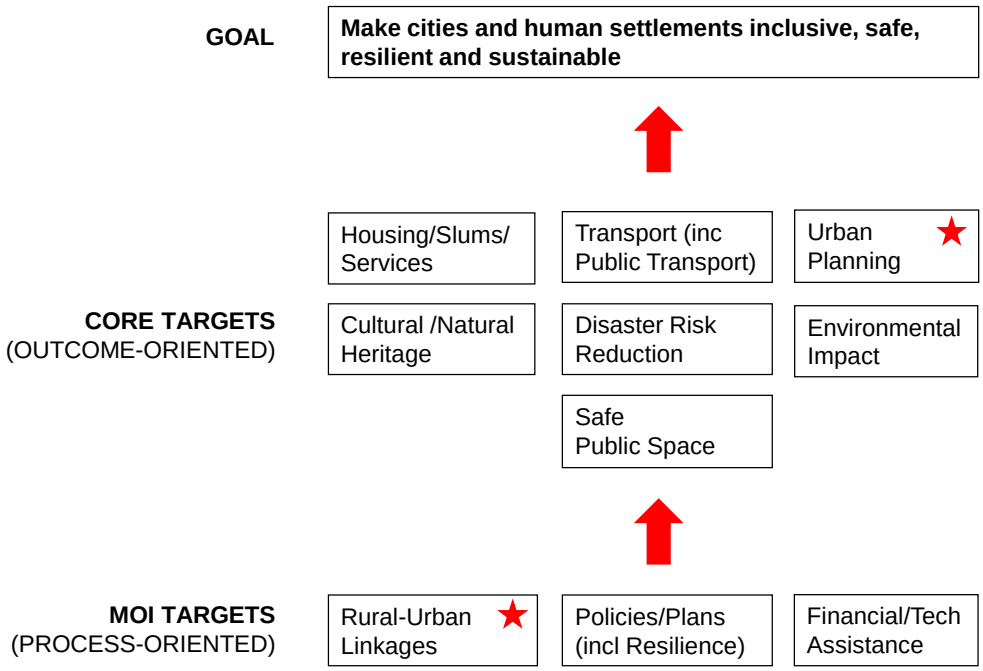
- Exploring the linkages between urban and peri-urban agriculture and climate change in collaboration between UN-Habitat, RUAF and the Government of Norway 2012-2013
- Demonstration cities in Sri Lanka, Nepal and Burkina Faso





Bobo-Dioulasso city as seen by Landsat 8 OLI-TIRS on Oct. 25, 2013. Reflective 564 bands (left); TIR band 10 (right)

Mapping of SDG 11 Targets



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Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning

- *Proposed Indicator 1: Cities with more than 100,000 inhabitants that implement urban and regional development plans integrating population projections and resource needs*
- *Proposed Indicator 2: Ratio of land consumption rate to population growth rate at comparable scale*



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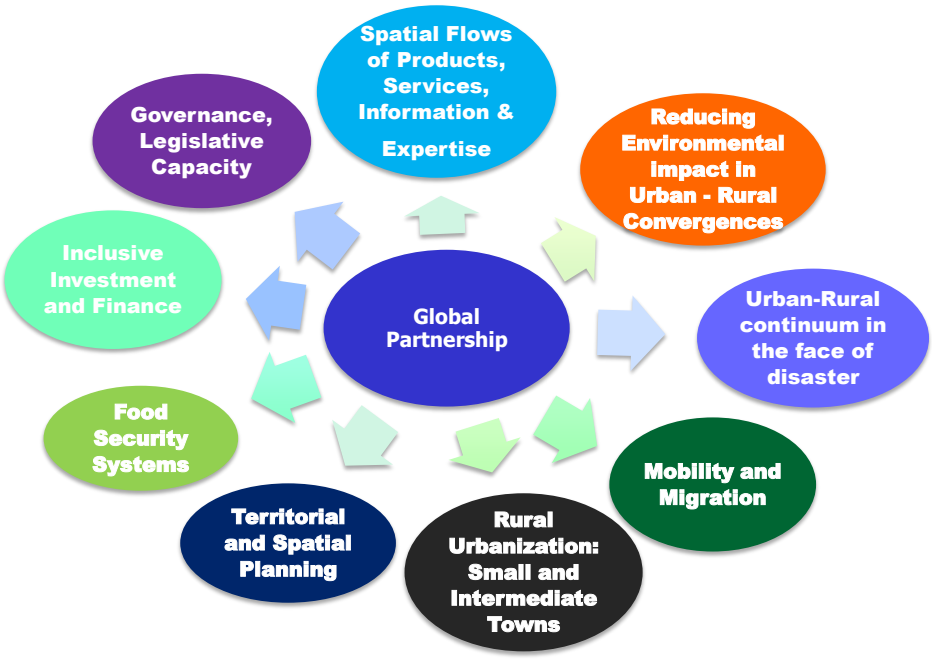
Entry points for action on urban-rural linkages



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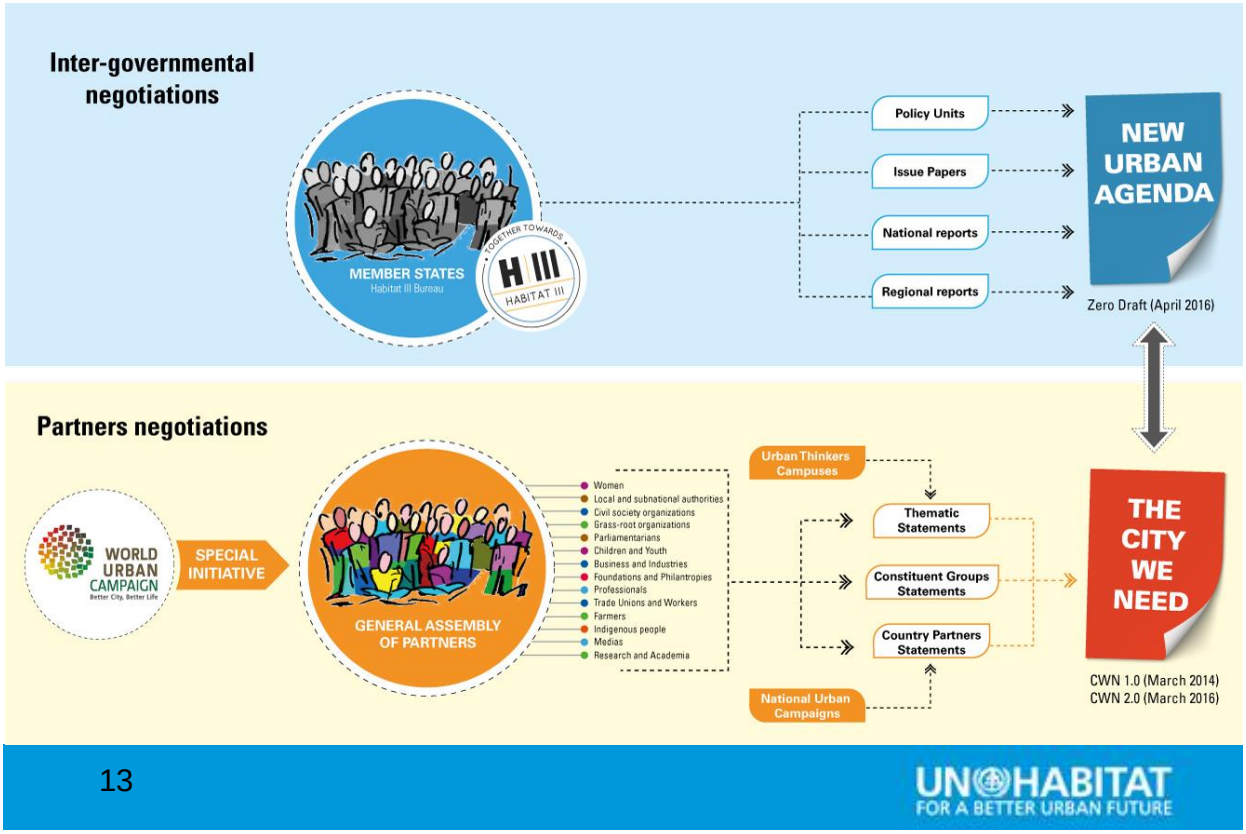
Strengthening Urban-Rural Linkages

UN-Habitat 25th Governing Council theme, dialogue and resolution calls for action on urban-rural linkages:

- reduction of disparities along the urban-rural continuum;
- strengthening of the capacity of rural service centres and small, intermediate and secondary towns;
- strengthen urban-rural linkages, focusing on knowledge exchange, policy dialogue and capacity development;

Habitat III, Quito, Oct 2016, New Urban Agenda



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Key issues of debate on urban-rural linkages

- Which types of governance mechanisms would improve the function of metropolitan regions, including the role of small, intermediate and secondary towns?
- How can we ensure tenure security and protection of land and other related rights of women, poor and vulnerable groups in the context of the urban-rural continuum?
- How can urban sprawl be managed, particularly in high-potential agricultural areas?

Polling Question

How can urban sprawl be managed, particularly in high-potential agricultural areas?

A. By enacting and enforcing an urban growth boundary.
B. By creating a productive green belt.
C. By providing sufficient affordable serviced land/housing to guide city expansion.
D. None of the above. Urban sprawl cannot be managed.

Thank You!

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CityLinks Webinar, June 16, 2015

Rubén Piacentini

- Chief of the Laboratory of Energy Efficiency, Sustainability and Climate Change, IMAE, Faculty of Exact Sciences, Engineering and Surveying, National University of Rosario (FCEIA, UNR), Rosario, Argentina

- Director of the Master Degree “Energy for Sustainable Development”, FCEIA, UNR

- Director of the Area of Atmospheric Physics, Solar Radiation and Astroparticles, Institute of Physics Rosario (CONICET- National University of Rosario)

CONICET

UNR

IFIR

imae INSTITUTO DE MECÁNICA APLICADA Y ESTRUCTURAS 50 AÑOS

FCEIA FACULTAD DE CIENCIAS EXACTAS INGENIERÍA Y AGRIMENSURA

UNIVERSIDAD NACIONAL DE ROSARIO

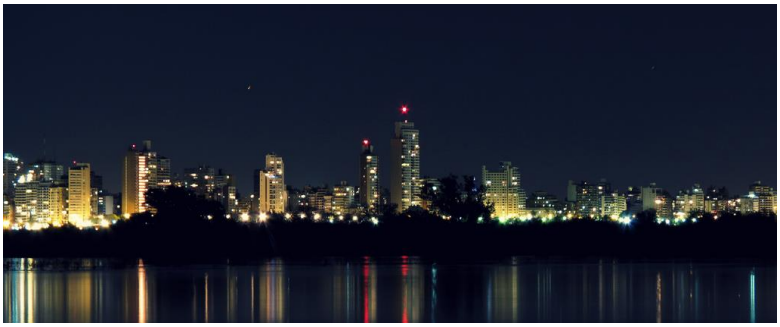
A Project from Rosario, Argentina

Integrating urban and peri-urban agriculture and forestry (UPAF) in city climate change strategies

supported by:

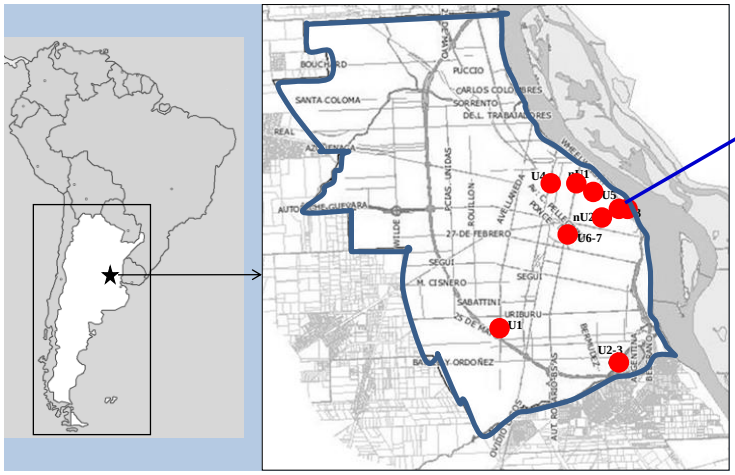
RUAF Foundation, UN Habitat and Climate and Development Knowledge Network (CDKN)

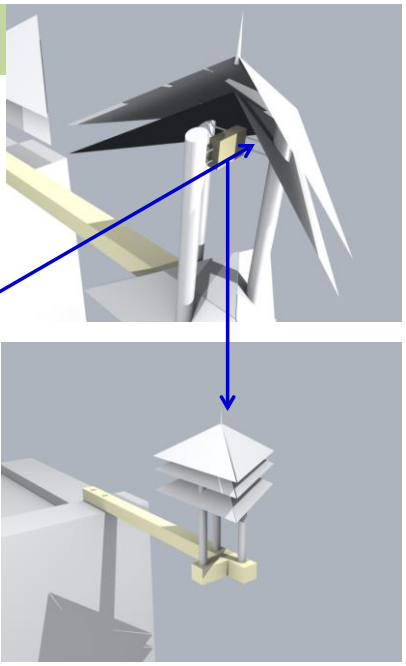
This presentation will highlight scientific results and include proposals based on them for Rosario.



Theme 1: Urban Heat Island

We have done ambient temperature measurements at 9 sites in Rosario.

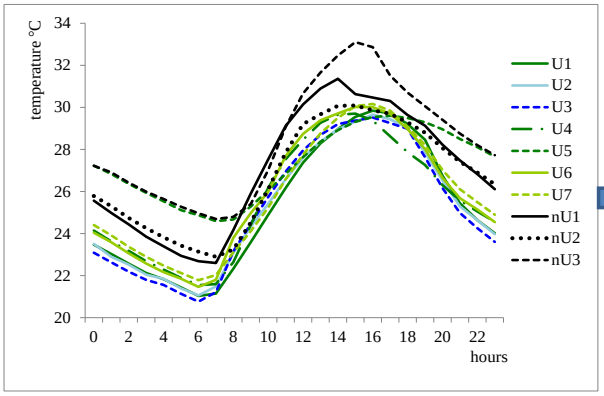




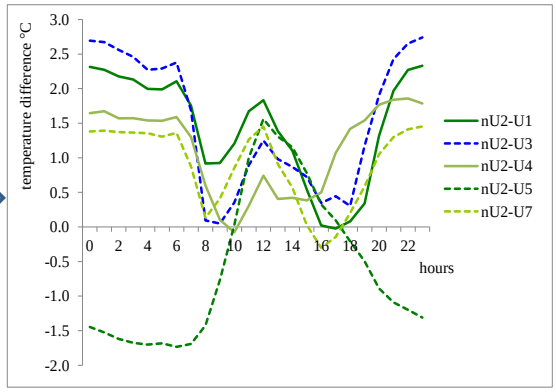
At each site, a temperature sensor with data logger was placed within a solar radiation shield.

Proposal: include more green and forestry areas in city to lower demand for cooling energy

Temperature differences between non-UPAF and UPAF sites, reached maximum values of 8.1°C in summer



Typical ambient temperature variations in summer in UPAF sites (Ui) and non-UPAF normal urban sites (nUi)

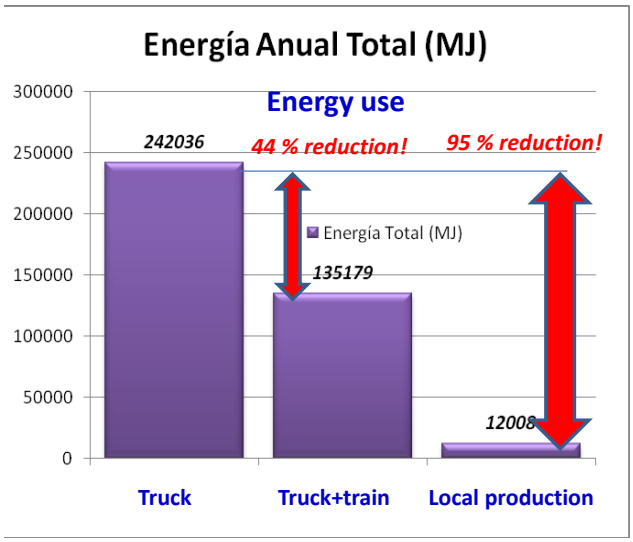


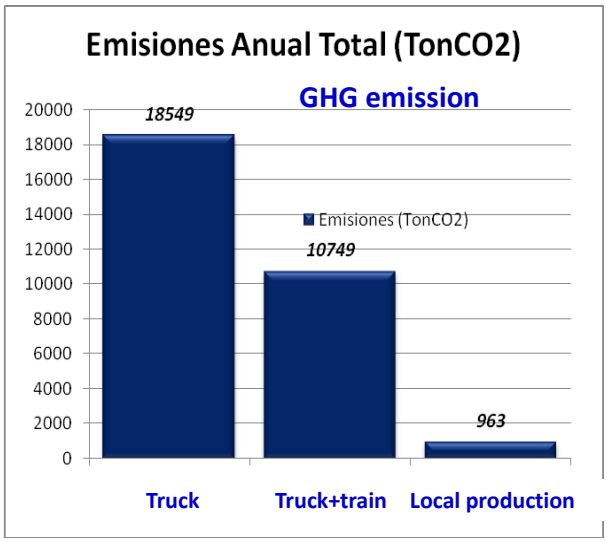
Difference in ambient temperature between non-UPAF and UPAF sites.

Theme 2: Food miles (or food transportation)

We first studied energy consumption and Greenhouse Gas (GHG) emissions in the transportation up to Rosario city, of potatoes produced in Balcarce, compared to a near peri-urban site in Arroyo Seco.

Proposal: protect and preserve the peri-urban greenbelt and intra-urban green parks for vegetable production.





A second study looked at the Energy use (left figure) and GHG emissions (right figure) related to transportation of the 6 main vegetables (potato, tomato, lettuce, onion, carrot, and pumpkin) consumed in Rosario, comparing truck, truck + train, and local production.

Theme 3: Run-off and storm water infiltration

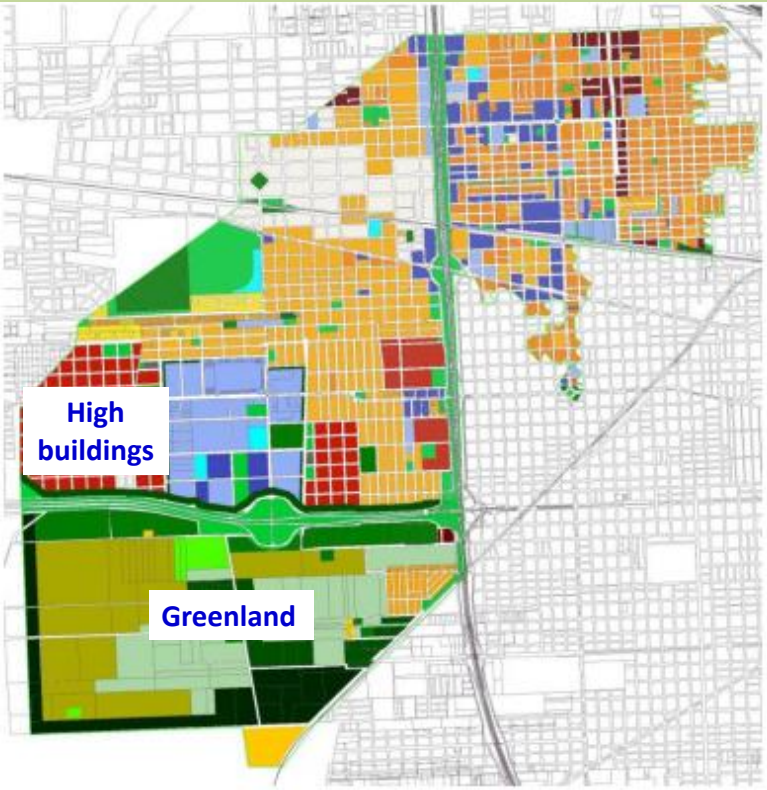
Rosario suffers from periodic floods that will increase, as predicted by the IPCC Report for the region.

Reference: Captura TV

We used a model for calculating water run-off and infiltration based on different land uses.

Proposal: the expansion of Rosario should consider more medium-rise buildings with lower degrees of land surface under these buildings and more natural green areas through urban agriculture, forestation, parks, etc. This is a substantial modification to the present development model that is mainly based on individual housing lots.

A practical application of this proposal is shown in this map, which presents a possible future scenario, with high concentration of buildings and large green areas (mainly at the left lower site).



Conclusions

From the results obtained in each of the Themes we were investigating and the active participation of the Municipality of Rosario in the promotion of Urban Agriculture and Forestry, we can conclude that:

- It is possible to reduce ambient and surface temperatures in urban environment (and consequently cooling requirements), if the green coverage is significantly expanded.

- If food consumed in a city is produced in its periurban region, a significant reduction in energy use and GHG emissions can be achieved.

- With an appropriate design, Rosario city habitats can be expanded considering medium-rise buildings with lower degree of land surface under these buildings and more natural green areas. Besides other beneficts, it will produce a large improvement in the reduction of rain water run-off and more water infiltration.

Thank you very much for your attention and interest.

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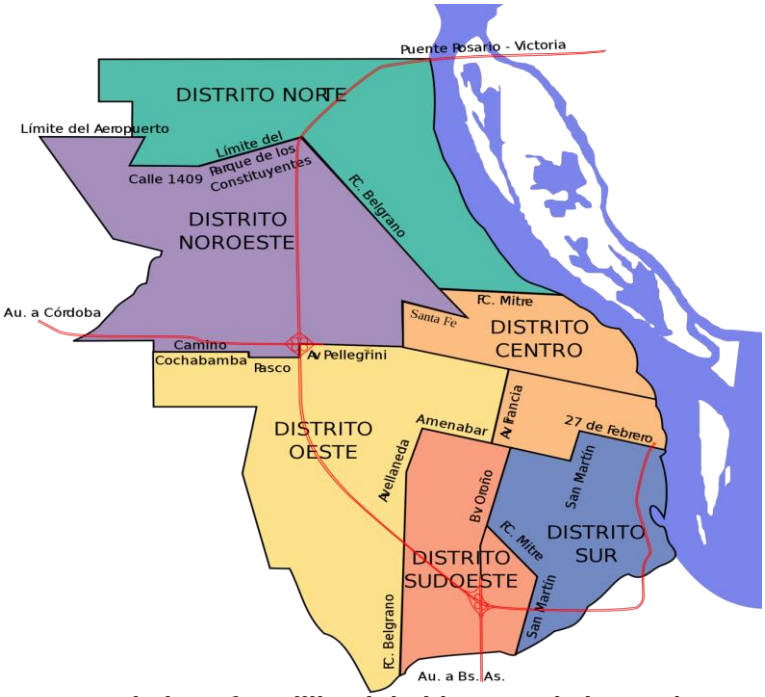
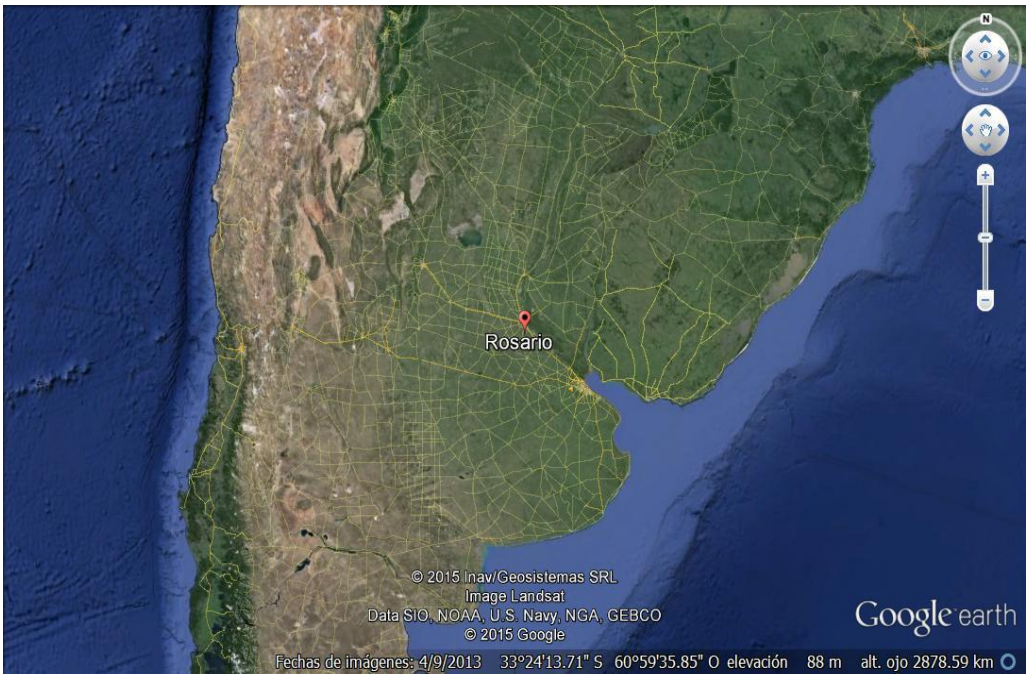
Urban agriculture, a need to mitigate climate change and promote sustainable cities

Hi, I'm Marcelo Tenaglia, I am the Primary Productions Coordinator of the Sub-secretariat for Solidarity Economy, Municipality of Rosario, which is responsible for managing urban vegetable gardens in the city of Rosario.

ROSARIO CITY

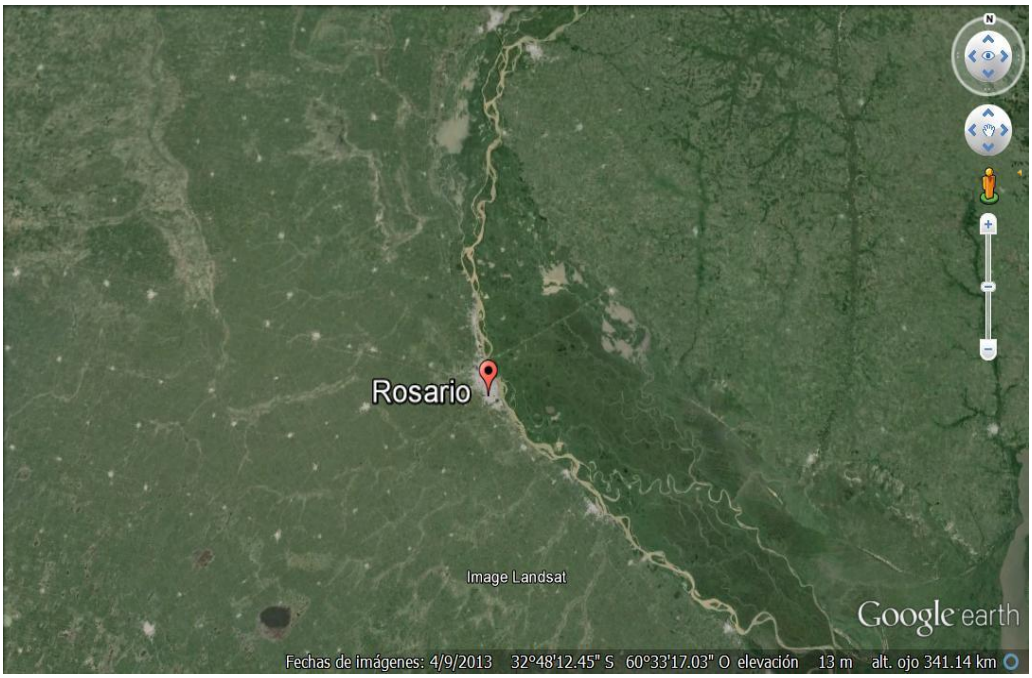


Rosario has a population of 1 million inhabitants. It is located next to Paraná River,



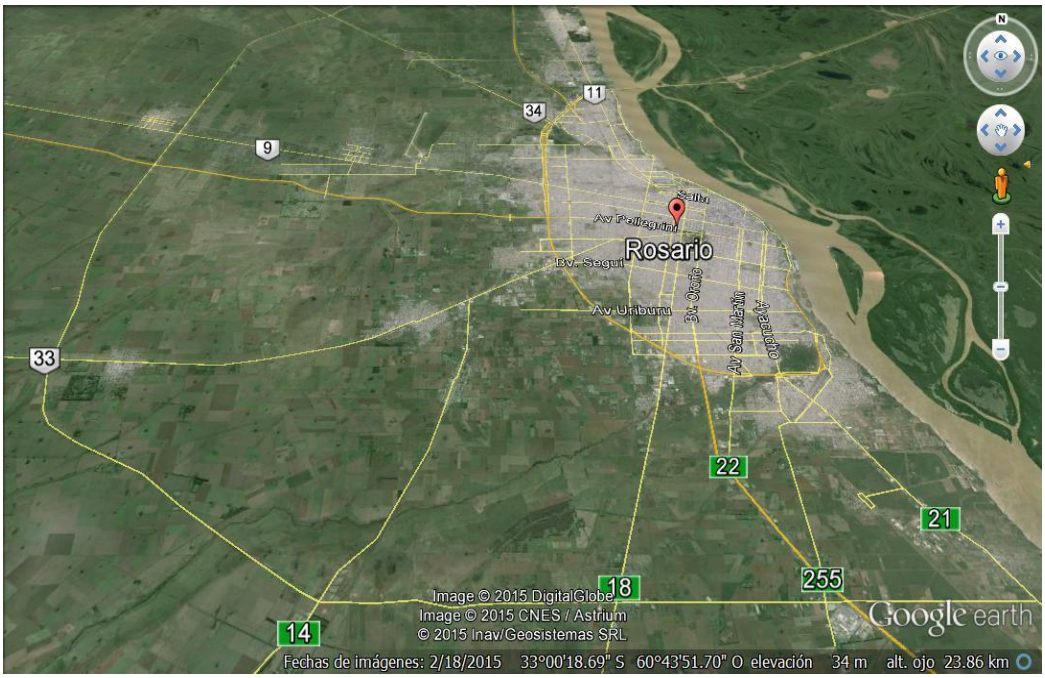
in the productive core of the central plain of Argentina.

The main influx of foreign currency comes from the exportation of over 100 million tons of grains produced in this region.

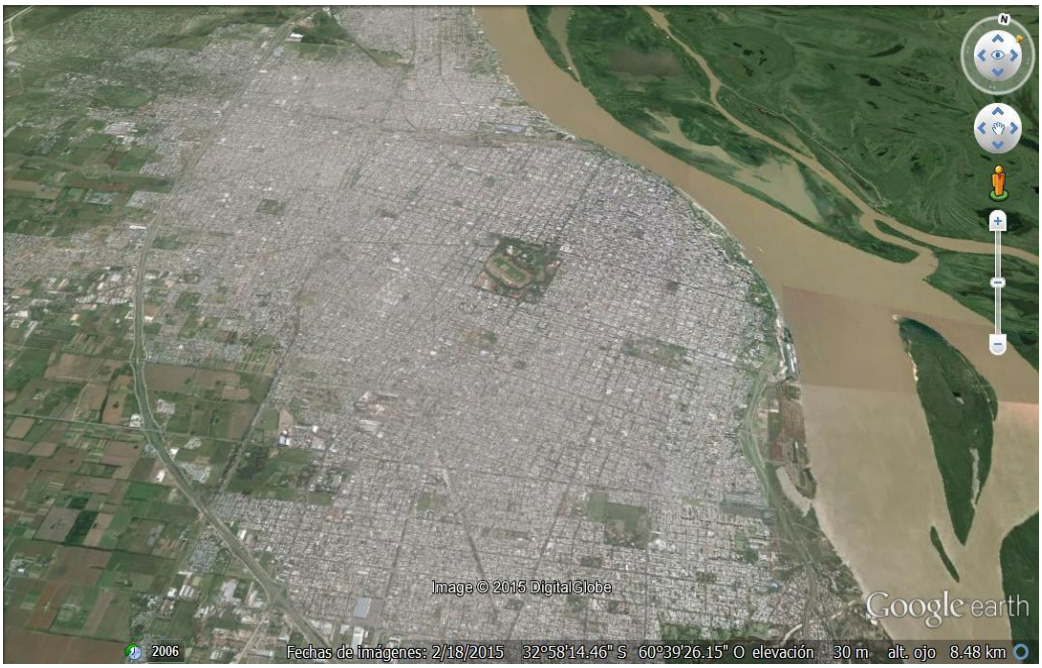


These commodities are mostly exported to China and Europe for animal breeding and fuel production.

One of the negative consequences of this production model is that the city has been surrounded by fields with genetically modified monoculture (mostly soybeans).

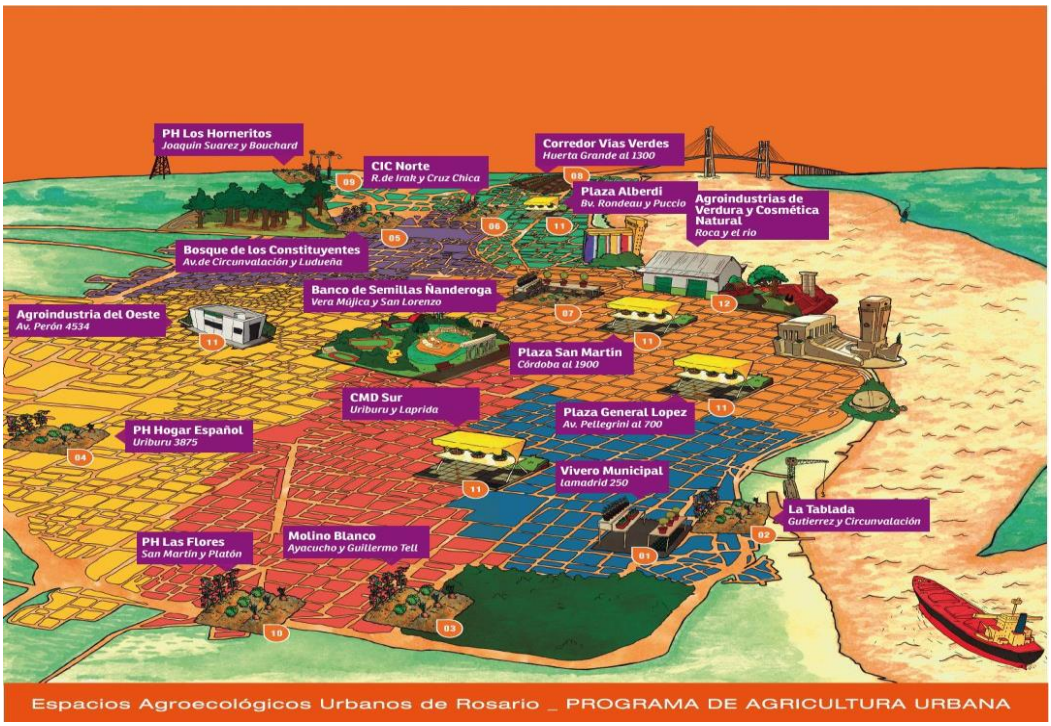


This decreases productive diversity in the peri-urban area surrounding Rosario, which threatens food security and sustainability.



Most of the fruits and vegetables consumed in the city are imported from hundreds of miles away.

Rosario Municipality's* Urban Agriculture *program aims to mitigate the problems previously described and end social exclusion and inequality at the same time. It promotes the idea of citizens as gardeners and guarantees land usage in inactive urban areas.

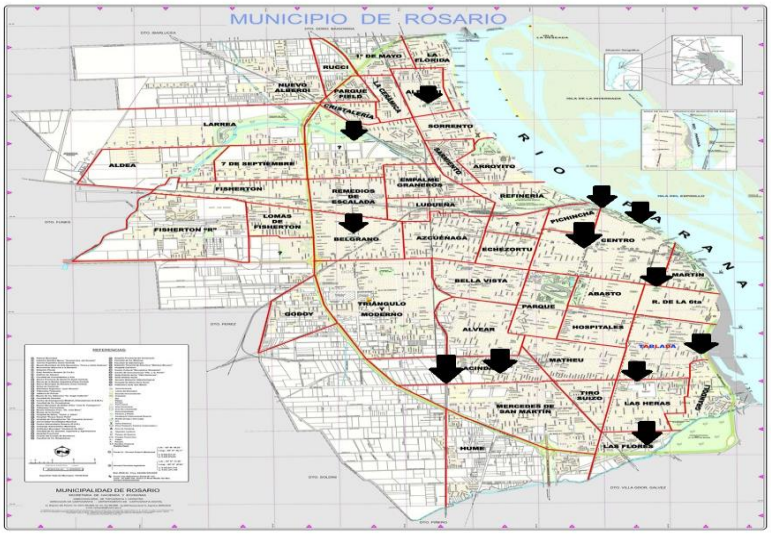


There are 22 hectares of vegetable gardens currently in use and another 45 hectares reserved for the expansion of the program. These gardens employ agro-ecological techniques to prohibit the use of any agrochemicals or unnatural fertilizer.

Through the program, 250 families produce 98,000 kg of vegetables and 5,000 kg of various aromatic plants annually, 10,000 kg of which are transformed into preserves, sweets, creams, and gels.

Through working with the land, and using the wisdom of our ancestors, both immigrants and native people have identified the useful properties of certain plants and adapted the seeds to our climate.

Fairs and points of sale of the Solidarity Economy



The Municipal State supports gardeners by generating and sustaining a network of urban fairs where producers have a place to connect to consumers directly.

The municipality also formed an association of gardeners to support training and commercial activities. This year the municipality bought 17,000 kg of vegetables.

Gardeners sustainably provide vegetables for the city with a minimal carbon footprint due to their close proximity and artisan production techniques. They also train other citizens how to begin and care for their own vegetable gardens.

This is a growing phenomenon: many families in the city, regardless of income level, want to learn to produce their own food without chemicals. Twice a year, seed kits come with a basic course in agro-ecological gardening. So far 1,500 households have adopted the practice.

Green areas like the one above contribute to the fight against global warming. Urban gardens range in size with some as large as several hectares. They are the "Parks Huerta" which have a high potential for regulating urban temperature, while not being peripheral.

Urban agriculture is highly reliable in Rosario. Vegetable gardens are the main source of food for families that grow them. The sale of the surplus is their economic livelihood and also contributes to environmental preservation in the city.

TORONTO

TORONTO FOOD POLICY COUNCIL

CityLinks Webinar

June 16, 2015

Lauren Baker
Food Policy Specialist
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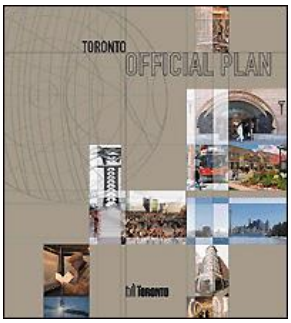
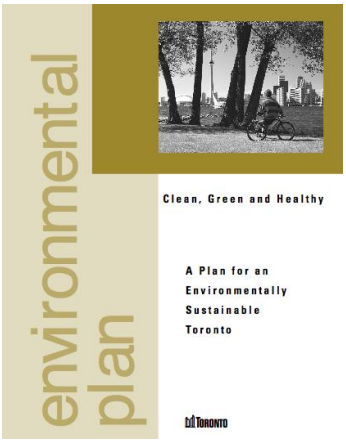
Does your community have any of the following:

A. Urban agriculture or community gardens
B. Local food procurement
C. Programs for access to healthy food
D. All of the above
E. Other or I am unaware of any activities like these taking place in my community.

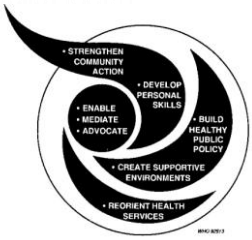
Broader policy context



Strong Neighbourhoods:
Responding to a Call to Action



Toronto's food policy history

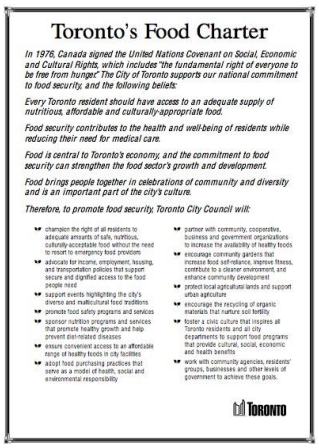


Ottawa Charter (1986)

TORONTO FOOD POLICY COUNCIL (1991)

Food & Hunger Action Committee (1999-2003)

Toronto Food Charter (2001)



Toronto's Food Charter

In 1976, Canada signed the United Nations Covenant on Social, Economic and Cultural Rights, which includes "the fundamental right of everyone to be free from hunger." The City of Toronto supports our national commitment to food security, and the following beliefs:

Every Toronto resident should have access to an adequate supply of nutritious, affordable and culturally-appropriate food.

Food security contributes to the health and well-being of residents while reducing their need for medical care.

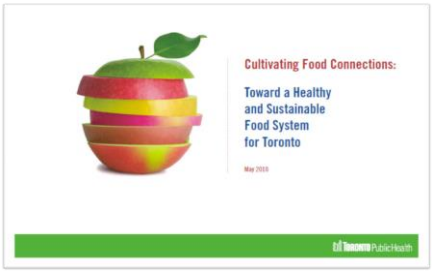
Food is central to Toronto's economy, and the commitment to food security can strengthen the food sector's growth and development.

Food brings people together in celebrations of community and diversity and is an important part of the city's culture.

Therefore, to promote food security, Toronto City Council will:

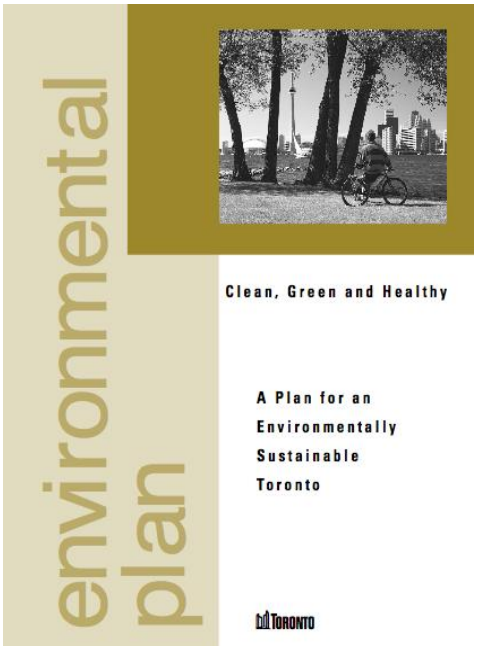
- champion the right of all residents to adequate amounts of safe, nutritious, culturally-acceptable food without the need to resort to emergency food provision
- advocate for income, employment, housing, and transportation policies that support secure and dignified access to the food people need
- support events highlighting the city's diverse and multicultural food traditions
- promote food safety programs and services
- sponsor nutrition programs and services that promote healthy growth and help prevent diet-related diseases
- ensure convenient access to an affordable range of healthy foods in city facilities
- adopt food purchasing practices that serve as a model of health, social and environmental responsibility
- partner with community, cooperative, business and government organizations to increase the availability of healthy foods
- encourage community gardens that increase food self-reliance, improve fitness, contribute to a cleaner environment, and enhance community development
- protect local agricultural lands and support urban agriculture
- encourage the recycling of organic materials that nurture soil fertility
- foster a civic culture that inspires all Toronto residents and all city departments to support food programs that provide cultural, social, economic and health benefits
- work with community agencies, residents' groups, businesses and other levels of government to achieve these goals.

TORONTO



Toronto Food Strategy (2010)

Environmental policy context



2007 - Climate Change, Clean Air and Sustainable Energy Action Plan

Actions include:

- Live Green Toronto program to engage Toronto residents, community groups and businesses in taking action to reduce their energy use and emissions
- a plan to promote local food production and increase community gardens
- local food procurement

Community gardening and urban agriculture

1993 - Interdepartmental collaboration in the City leads to the creation of the report: *"Supports for Urban Food Production: Creating a Garden City."*

1997 - Community Gardens Program Coordinator position created in the Parks, Forestry, and Recreation division of the City.

1999 - City Council endorses the Community Garden Action Plan, which sets the goal of establishing a community garden in every ward of the city.

2001 - Through the adoption of the Toronto Food Charter, City Council promises to support community gardening and urban agriculture in the interest of increased food security in the city.

2002 - Toronto's Official Plan expresses support for community and rooftop gardens as important elements for creating beautiful, healthy and active cities and for engaging diverse communities.

2002 - City of Toronto partners with TRCA to create the Toronto Urban Farm at Black Creek.

2004 - City of Toronto hosts the American Community Gardening Association annual conference.

2005 - The City's Community Partnership and Investment Program funds FoodShare Toronto, and its partners The Stop Community Food Centre, the Afri-Can Food Basket and Second Harvest to start the Toronto Community Food Animators Program.

2006 - City supports TDSB research on market gardens.

2006 - Toronto's Official Plan expresses support for community and rooftop gardens as important elements for creating beautiful, healthy and active cities and for engaging diverse communities.

2007 - Toronto Community Housing publishes a Community Gardening Manual.

2009 - TRCA introduces a progressive Sustainable Near-Urban Agriculture Policy.

2009 - Through adopting the report "Identifying Urban Agriculture Opportunities in the City of Toronto," City Council affirms its support for strategies and initiatives that achieve the overall goal of expanding opportunities for local food production in Toronto.

2010 - The Toronto Food Strategy is established as a unit in Toronto Public Health. Goals of the Strategy include the development of policy and program options to support an increase in urban agriculture activities across the City.

2011 - City supports the GrowTO Speaker Series.

2012 - City Council endorses the Greater Golden Horseshoe Action Plan, which promotes the preservation of farmland in Ontario as well as the expansion of urban opportunities to produce food.

2012 Urban Agriculture Summit
2012 City Council endorses GrowTO Action Plan
2013 City Council creates the Toronto Agriculture Program and Urban Agriculture Steering Committee

Toronto Agriculture Program Priorities 2015/2016

1. Support the promotion of agricultural activities
- Black Creek Community Farm Health Impact Assessment and indicators
- Guide to Growing and Selling Fresh Fruit and Vegetables in Toronto
- Soil Assessment Guide

2. Facilitate access to land for agriculture
- Hydro gardens in 4 communities
- Market gardens through Residential Apartment Commercial zoning

3. Identify and address policy barriers to the expansion of agriculture in Toronto
- Review of zoning bylaws
- Best practices for rooftop urban agriculture

Local food procurement

City Council passed the local food procurement policy in 2011

Set targets of 25% local food purchasing

Strategies to increase local food purchasing include: menu planning support and training; community food procurement portal; local food promotion

Live Green Toronto

Grants, incentives, tips and guides
- home energy loans, eco-roof incentive, community grants, Live Green card, maps and guides.

Active transportation
- cycling, walking, public transportation, car share and carpool

Volunteer opportunities, events and awards
Live Green awards

Local food and gardening promotion

Kids and schools programs

Community facilitators

Black Creek Community Farm

Everdale

Afri-Can FoodBasket

FRESH CITY FARMS

Jane/Finch Community and Family Centre

The World Crops Project
from Greenbelt Farms to Urban Gardens

TORONTO AND REGION Conservation for The Living City

Food Share
Good Healthy Food for All!

YORK UNIVERSITÉ UNIVERSITY

Driftwood Community Centre

TORONTO Public Health

RYERSON UNIVERSITY

Black Creek Community Farm

Goals

- Serve and inspire the local community
- Build community food security by growing fresh healthy food
- Support diverse natural and social ecosystems
- Create new and dynamic economic opportunities through hands-on training and intergenerational learning experiences
- Provide a food justice leadership model for other communities

Photo credit: Everdale

Resources

Environment and Energy Division

http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=fd95ba2ae8b1e310VgnVCM10000071d60f89RCRD

Live Green Toronto

http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=8131fbfa98491410VgnVCM10000071d60f89RCRD

Archive of Toronto's food policy decisions

http://tfpc.to/to-food-policy-archive

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