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Urban systems of survival: Building a resilient capacity of food and housing in the city

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URBAN Systems of Survival

Building the Resilient Capacity of the
Built Environment

This paper focuses on the intersection between affordable housing and access to affordable, culturally appropriate food in the context of urban human-centred settlement.

Intro: Context & Rationale

What makes a “well designed” city is one that meets both the fundamental necessities of dwellers; basic needs of air, food, shelter and clothing, and more secondary needs of sanitation, education, healthcare, and a sense of social and cultural belonging.



Basic Human Needs

This basic needs approach was introduced by the International Labour Organization's World Employment Conference in 1976 and according to John A. Denton, the list of immediate "basic needs" is air, food (including water), shelter and clothing. (Denton)

As the global population increases and crop yields decline due to environmental factors, the availability of imported food in the future becomes uncertain.

"Over the next 50 years, our societies and cities will therefore need to effectively respond to these challenges, or suffer significant economic and social consequences."

(resilientcity.org)

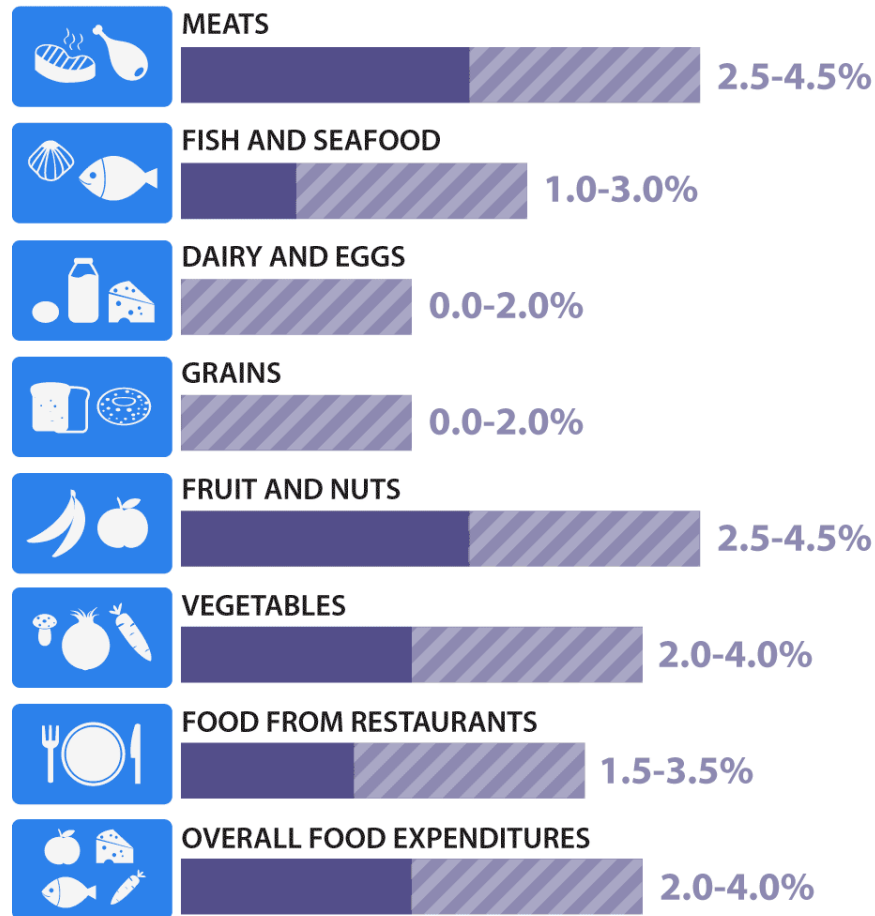
Understanding AFFORDABILITY



Understanding Affordability

Along with exponential growth comes the challenge to house and feed the increased population. As the city of Toronto's population expands so does its need for affordable housing and access to affordable, nutritious, culturally appropriate food.

EXPECTED FOOD PRICE INCREASES IN 2016



SOURCE: THE FOOD INSTITUTE - UNIVERSITY OF GUELPH

THE CANADIAN PRESS

Figure 1: Source: Future Proofing Cities: strategies to help cities develop capacities to absorb future shocks and stresses, Craig Applegath, 2012.

Understanding Affordability

There are only 3 days of perishable goods, 8-9 days of frozen food and 14 days worth of dry goods in distribution centers around Toronto at any one time.

(Elton,147)

The need for a local food system, is emphasized by the competing need of an affordable place to live. This has created a high demand market, with increased real estate prices, and costly and scarce rental accommodations.

“In 2015, approximately 100K persons moved into the (City of Toronto) GTA area around and in Toronto. To satisfy these demands for housing, Toronto has to make available approximately 45K units per year to meet this demand.”

T. Tyndorf, Perspectives on Housing Affordability, Toronto City Policy Planning & Research, July 2006.

St. Lawrence Housing Development

Irving Grossman, Klein & Sears, Vaclav Kuchar & Associates, B. Lebedinsky, Jerome Markson, Matsui Baer Vanstone Freeman, Robinson & Heinrichs, JE Sievenpiper, Silaste & Nakashima, Thom Partnership, 1977-82

District Lofts

368 Richmond Street, Peter Clewes, Architects Alliance, 2000

Aura Tower

Gerrard and Yonge, Graziani + Corazza Architects, 2015



Toronto committed to building
1,000 new units of affordable
housing a year between 2010-2020

In 2015 it built 103 units

(Toronto Vital Signs Report 2016)

*What is the reasonable
definition of affordable in this
context?*

Perspectives on Housing affordability

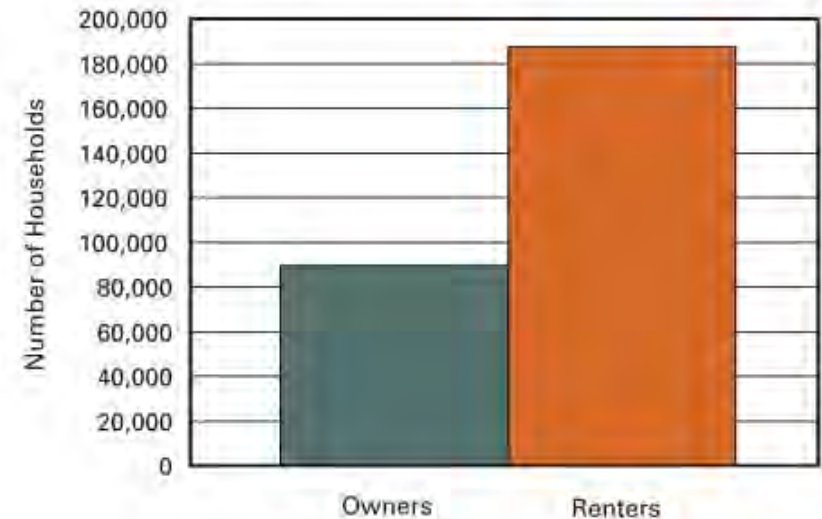
More Renters face greater affordability problems than owners. They have shelter costs to income levels that are about 50% higher than owners in the large cities across Canada. Almost 100,000 renter households paid more than 50% of their income on shelter.

One-third of all Toronto households spent more than 30% of their income on shelter in 2001: 65% of these were renters. Low to moderate income households that spend more than 30% of their income on their housing are generally considered to have an affordability problem.

By this measure **about 30% of Toronto's households face an affordability problem.**

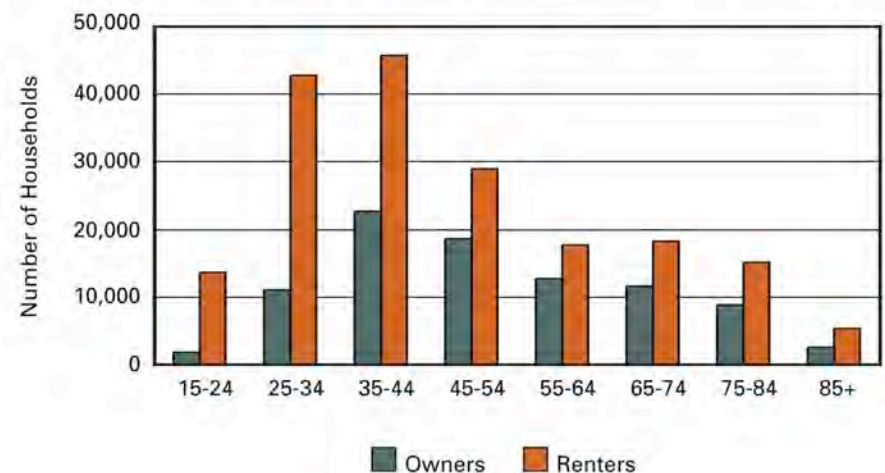
The vacancy rate in the Toronto region
in 2015 was only 1.8%
(Toronto Vital Signs Report 2016)

Figure 7: Households with Affordability Problems by Tenure, Toronto, 2001



Source: See Table 6

Figure 8: Number of Households with Affordability Problems by Tenure and Age of Primary Maintainer, Toronto, 2001



WH
AFF

"Rent and housing is the most pressing non-negotiable expense from which other necessities including food are sacrificed."

(www.dailyfood.ca)

**1 in 10 households in the Toronto region
are food insecure**

(Toronto Vital Signs Report 2016)

As a systemic problem case, Toronto has become a city with a serious need for affordable food, and affordable housing to serve primarily young families, the working poor, new Canadians, most of which are looking for rental accommodations.

The **INTEGRATION** of Housing & Food



There are a number of systemic approaches to integrate housing and food to build capacity and create a more resilient city system.

There is a need to look at mixed-use space that includes low, medium and high-density residential space and food access based urban agricultural practice to increase access to affordable housing and nutritious, culturally appropriate food.

BUILDING RESILIENCE



The needs of a resilient local food system

According to Gene Giacomelli, the director of the Controlled Environment Agriculture Centre, “indoor farming can produce as much as 20 times the amount of food per unit area as conventional outdoor farming.” Giacomelli is also a professor in agriculture and biosystems engineering at the University of Arizona. (Zimmerman) (Zimmerman, Eilene. 2016.



Verticle farms – AeroFarm

AeroFarms's Ed Harwood, chief science officer; Marc Oshima, chief marketing officer; and David Rosenberg, chief executive, in front of vertical farming trays at the company's location on Ferry Street in Newark. Credit Bryan Anselm for The New York Times

Rooftop farms – Lufafarms

Lufa Farms. Photo: Benoit Rochon Source: Wikimedia:

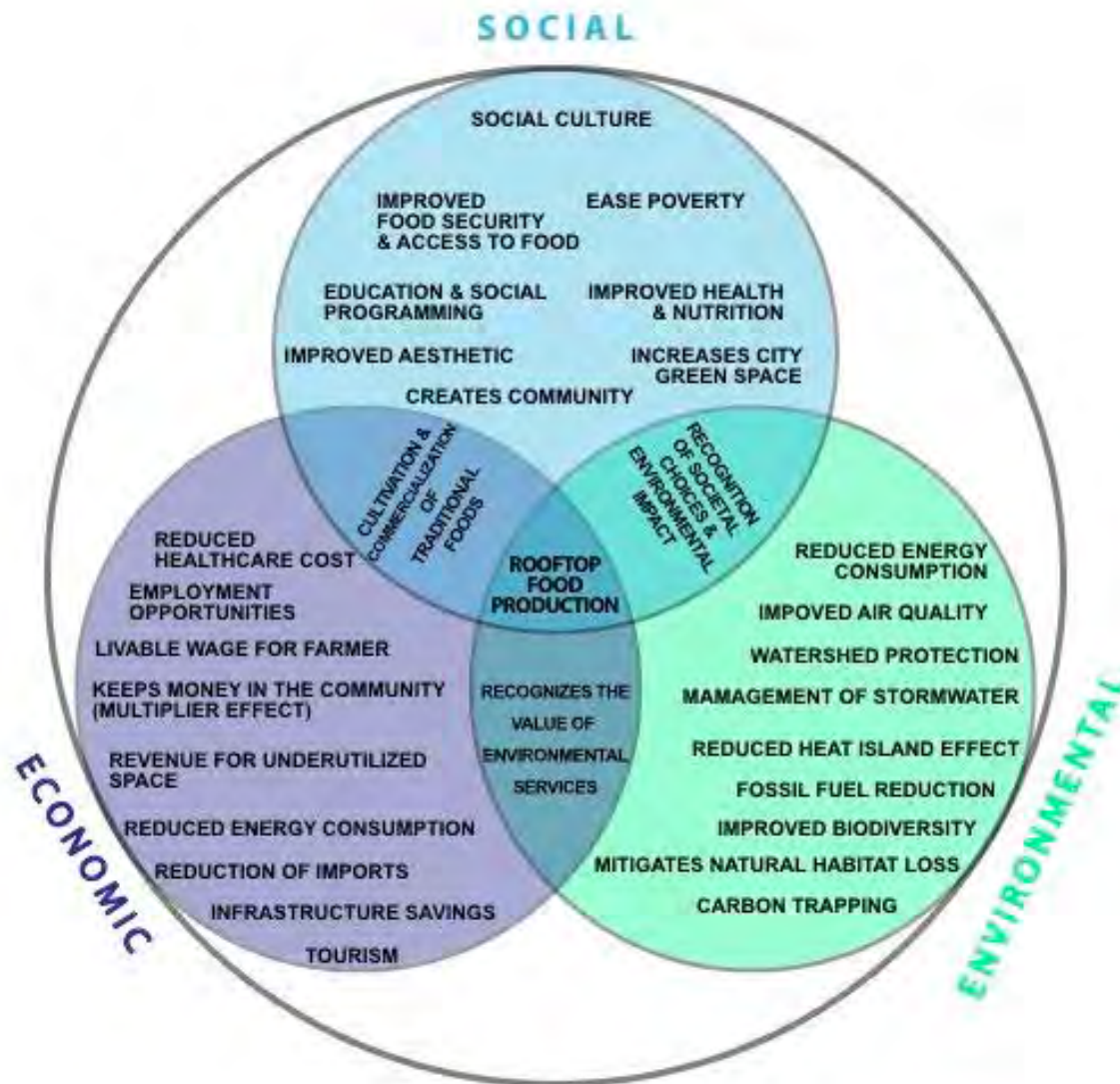
[https://commons.wikimedia.org/wiki](https://commons.wikimedia.org/wiki/File:Lufa_Farms_Montreal_rooftop_greenhouse_in_Sunlight)

File:Lufa_Farms_Montreal_rooftop_greenhouse_in_Sunlight.



“The answer to local, urban food production lies in a vertical approach to farming that contrasts with land-intensive methods. A high-efficiency hydroponic farm needs just 0.1 acres to feed a person for a year. A 95% reduction in acreage.”

(Craig Applegath 8)



Benefits of Urban Agriculture

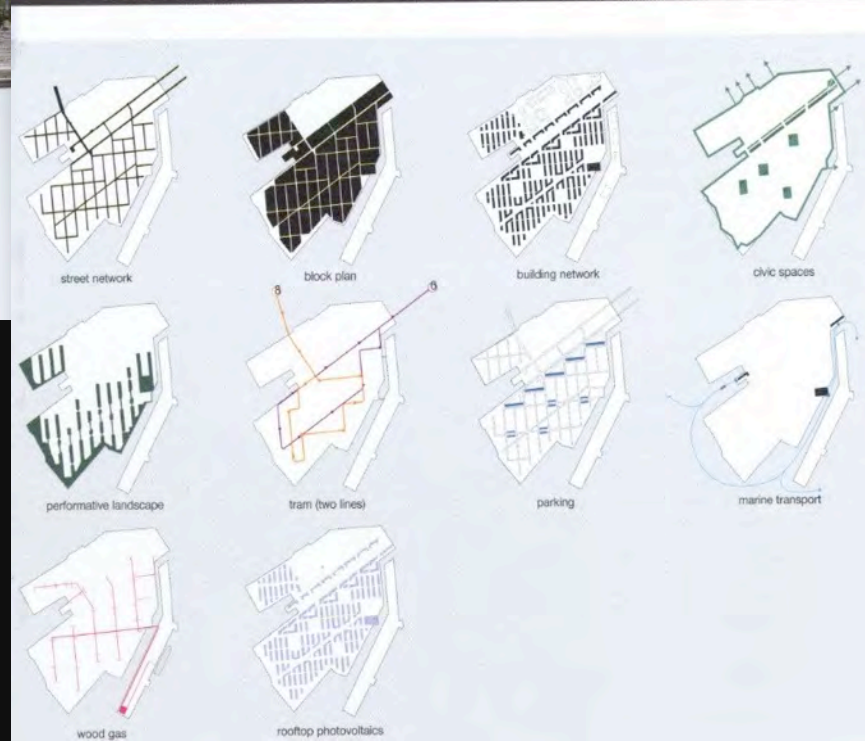
Benefits of Urban Agriculture Adapted from IAASTD (2008)

Source: Assuring Food Security in Developing Countries under the Challenge of Climate Change

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Ulrick Haffman (2011) United Nations Conference in Trade Development (ONCTAD)

No. 201 February 2011



*Helsinki Sustainable Ecological Community Housing,
Van Valkenburgh Assoc., Jatkasaari, Helsinki, Finland*



Richmond Street Coop
60 Richmond Street, Teeple Architects, 2009-10



*The built environment of the
alternative city of the future must
be self-sufficient building the capacity
to generate its own resources in
terms of energy and food from within
the city itself.*



Second suites Program

Photo By Jeremey Bowes

Rooftop Garden Designed by TWS Partners

(<http://www.urbansplatter.com/2014/04/rooftop-gardens/>)

Residential Car Port Roof Garden

(<http://www.urbansplatter.com/2014/04/rooftop-gardens/>)



MAKING CHANGE

A program of Recommendations



Creating change to increase
affordable housing and food access
at both the community and
individual level requires
engagement from a large number
of stakeholders

Critical areas of recommendations for changing fall into four broad categories.

- 1 Access**
- 2 Changing Attitudes**
- 3 The need for policy and legislative change**
- 4 Investment**

Critical areas of recommendations for changing fall into three broad categories.

- 1 Access**
- 2 Changing Attitudes**
- 3 The need for policy and legislative change**
- 4 Investment**

Innovations and Opportunities can be broken down further into: Hard solutions

Soft Solutions

Organizational Solutions

All new housing development should include the infrastructure for food sustainability including growing, processing, storage and distribution. This could be in the form of a rooftop productive garden for low-rise buildings or multiple floors of vertical farming space in high-rises with the number of floors being determined by the housing capacity of the building

*To be resilient
food system planning needs to be
integrated into city planning that
includes the coordination of all
municipal departments and
stakeholders.*

t h a n k y o u

Resources ..to be integrated



Resources

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