The Urban Foodshed Collaborative: Linkages between People, Places, and Plants in the Urban Ecosystem

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The Urban Foodshed Collaborative

- The Urban Foodshed Collaborative is a fledgling organization situated in a dynamic environment:
  - Sliver lot land tenure is tenuous, at best;
  - the success of community gardens are contingent on community interest, participation, and support;
  - Sale of fresh, local produce to restaurants and retailers is dependent on market demand, competitor’s pricing, and favorable weather conditions;
  - Ability to employ youth will, after initial funding runs out, be reliant on profit generated by the UFC
Decision-Making Process: Determining Priorities

The Stakeholders:

- The Founder: Justin Freiburg
- The Participants: UFC Project Team Members
- The Organization: UFC and the URI Board
- The Course: Linkages of Sustainability
- The Faculty: Linkages of Sustainability Professors’ own areas of interest and expertise
- The Institution: F&ES Bins
Our Framework of Sustainability for the Urban Foodshed Collaborative

- A sustainable UFC has the ability to:
  - provide locally grown and regionally appropriate produce;
  - bolster community health and well-being;
  - persist as a successful organization.

- In this regard the UFC project will work towards a goal of sustainability by addressing the environmental, social, and institutional challenges of urban agriculture through inter- and transdisciplinary linkages.
Graphical Representation of the Urban Foodshed Collaborative System

What Does UFC need to sustain its mission and vision?

Environmental Resources
- Urbanization/Pollution
- Climate Change
- Rain Availability
- Accessibility
- Nutrients
- Contaminants/Pollution
- Soil
- Gardening Beds
- Legal Access/Land Tenure
- Small Lot Quantity
- UFC Selection Process

Social Resources
- Labor & Support
- Youth employees
- Community supporters
- Food deserts
- Cultural preferences
- Community values and goals
- Sense of place
- Social marketing
- Spatial heterogeneity
- Green spaces
- Public investment

Urban Infrastructure
- Plants
- Plants grown
- Already present plants
- Quantity that can be produced
- Pest Management
- Sustainability
- Energy

Institutional Framework
- Customers
- Who are they?
- Retail/Restaurant
- Food Desert Residents
- Restaurants
- Zoning - Laws/Regulation
- Time
- Maintenance
- Political Will
- Money
- Time
- Space
- URI Board Buy-in
- URI Board
- Mission
- Organizational Structure
- Advisory Board
- Funding

I Urban Foodshed Collaborative
Community-based Social Marketing

A strategy for communicating about community assets and needs
Ecological Aspect

Sustainable relationships between people and:

- product (food)
- means (gardening)
- medium (ecosystem)
Urban Ecology
Sir Arthur Tansley, 1935:
“…ecology must be applied to conditions brought about by human activity. The ‘natural’ entities and the anthropogenic derivates alike must be analyzed in terms of the most appropriate concepts we can find.”
Social, built, and natural systems are connected across scales

Spatial
- Microclimates (plot)
- Impermeable surfaces (neighborhood/watershed)
- Invasive species (neighborhood/city)

Temporal
- Urban heat island (daily)
- Precipitation patterns (weekly)
- Urban planning (annual/decadal)
A bird in the hand is worth a dollar in the bank.
Conceptual model

Patterns:
- Land use
- Land cover
- Transportation
- Artificial drainage
- Heat islands
- Diseases

Processes:
- Runoff/erosion
- Nutrient cycles
- Predation
- Movement of organisms
- Economic markets
- Community development

Drivers:
- Population growth
- Economic growth
- Land-use policy
- Infrastructure investments
- Topography
- Climate

Effects/changes:
- Natural productivity
- Salmon runs
- Macroinvertebrates
- Biodiversity
- Community dynamics
- Human behavior

Alberti et al. 2003
Life on the Sliver Lots

- What is growing on the sliver lots already?
  - Japanese Knotwood, Mugwort, Privet, Dandelions, Norway Maple, Chickadees, Bees, (+ Raspberry Bush & Snake)

- UFC Crops
  - First Year: tomatoes, corn, squash, herbs, greens…
  - Focus on Leafy Greens, esp. Mustard Greens
Leveraging Ecosystem Services

- What ecosystem services can the sliver lots provide for the raised bed plantings?
- Pollination?
  - Useful Service? Community co-benefits?
- Pest Management: Push-Pull agriculture strategy
  - Putting plants that repel insect pests (‘push’) amongst the crop, and growing diversionary plants that attract insect pests (‘pull’) at the perimeter.
  - Pioneered in Africa, applicable to New Haven?
Sustainable Pest Management

- Diamondback Moth (*Plutella xylostella*)
  - Globally destructive pest on cruciferous plants. Notable pest for UFC crops.
  - First insect observed to with resistance to Bt.

- Push-pull Agriculture Strategy
  - Wintercress / Yellow Rocket (*Barbarea vulgaris*)
  - Moth prefers to lay eggs on *B. vulgaris*, yet the eggs do not hatch due to saponin in the leaves. This makes it an excellent potential “pull” or trap crop, if planted at the perimeter.
Water Resources

- Two potential options for UFC’s water supply
- Available rainfall – avg. 4”/month
- Impacts of climate change
Water Resources

Impacts of Urbanization

• Air pollution
• Acid rain
• Heat Island Effect
Avoid potential impacts of urbanization and climate change by working with the community to acquire access to a local tap.
Social Aspect

Sustainable relationships:

- between community and UFC
- among members of UFC
- within each member through UFC
Community-based Social Marketing

- Methodology for uncovering **barriers, benefits, and competition**
  1. Literature review
  2. Roundtables
  3. Assessments
Social Sustainability

Bringing healthy food to communities
Filling the Gaps in ‘food deserts’

Urban Farm Access

Sliver lots

Justin Freiberg et al.

Urban Foodshed Collaborative
Barriers to healthy foods

"bringing good food to others"

Community vs. Organization
- different food narratives
- cultural preferences for food
- prioritization of food values
Whose goals, and whose values?
USDA: 6 cups/week per adult
124,000 NH residents = 35 million cups of spinach/yr
Land required?

1780 acres…
6.8% of New Haven
Scale of a Foodshed

Possible on a smaller scale?

550 Sliver Lots = 1641 New Haven Residents

4 Sliver Lots (current number) = 7 (lucky!) New Haven Residents
Institutional Sustainability

- Institutional Sustainability is about designing an organization around pre-established mission and values, and not the other way around.

- Much as it positioned itself in the foodshed, the UFC is at a critical moment in terms of deciding where it fits in the not-for-profit, for profit, hybrid, and volunteer-based organizational landscape.
Institutional Framework

Can nature and business coexist?

“Profit Motive has no conscience
“A new consciousness is developing which sees the earth as a single organism and recognizes that an organism at war with itself is doomed.”
- Carl Sagan
Organizational Structure

Organizational sustainability is informed by the institutional framework, and vice versa.
Achieving sustainability is about identifying and mitigating a series of critical trade-offs:

- Climate Change, or Air Pollution?
- Bio-control of Pests, or Invasives?
- Scale: Neighborhood, Local, State, or Global?
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"At first I didn't really like it, cleaning the lots...but then I started thinking...you know it really could help our community, and it could do some good for the neighborhood - from taking nothing, and making it into something. I learned - so far - I learned a lot...and I'm gonna keep on learning. I'm going to try to use this for the future, maybe. When this program is over, I'm going to start cleaning up, gardening, recycling...taking the basil, and use them for the kitchen (or something)."

~Noel, 2009 UFC Student