

Measuring Success

In Food System Planning

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Photo: <https://pixabay.com/photos/measuring-cup-bake-cook-eat-baker-2510243/>





Bridging the Practice Gap

Between Planning and Public Health

Health Promotion

Decision makers used technical expertise to identify problems and solve them:

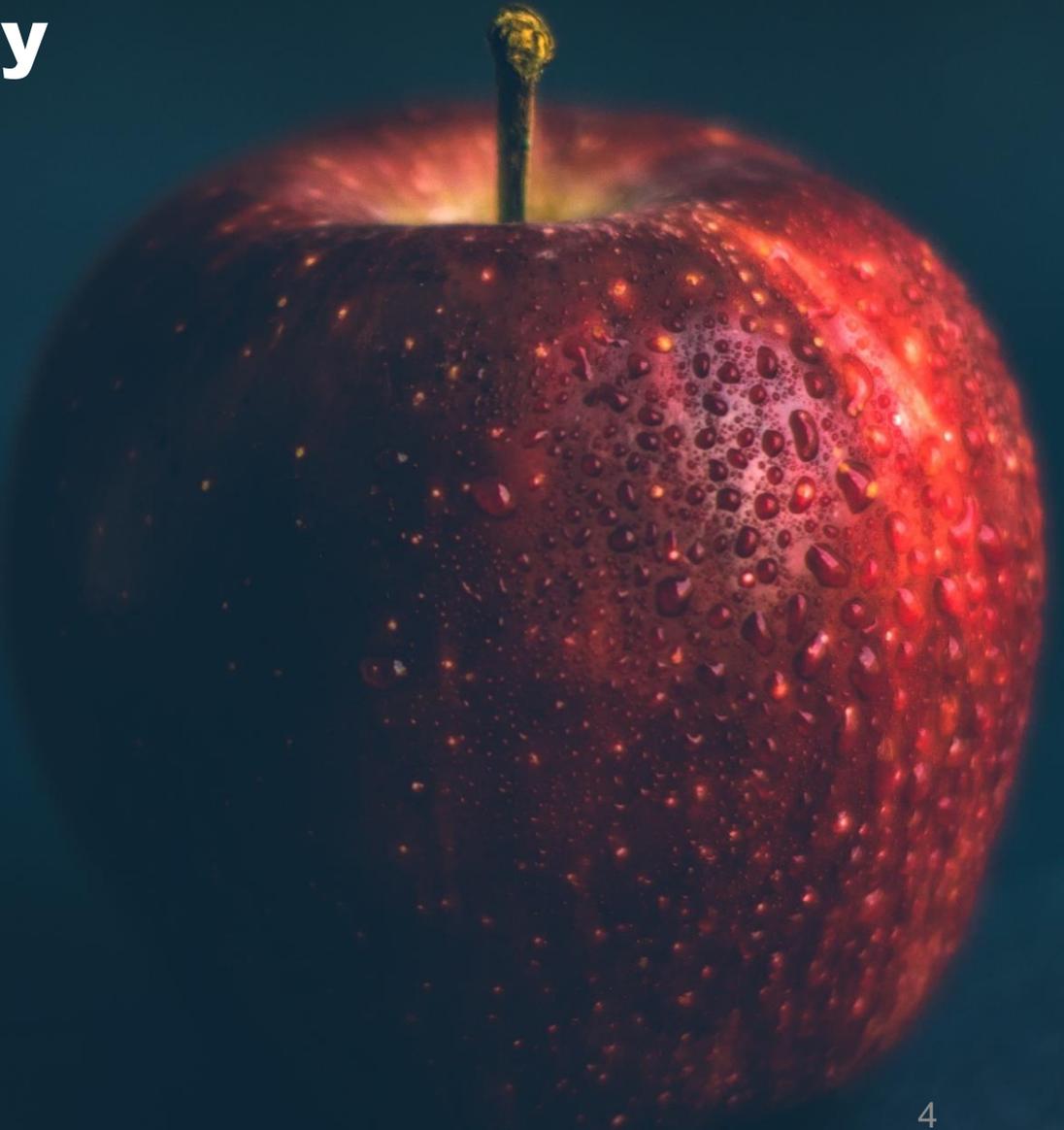
- Inoculate the population (vaccines)
- Modify buildings to improve living conditions (building codes – air quality, fire hazards)
- Build infrastructure to dilute or remove variables (sanitation for clean water and to remove waste)
- Separate the population from the variable (zoning to reduce industry pollution)



Public Health: Seeking a Normative Theory

Public Health strives to use scientific methods to find a “single truth” based on evidence.

Once successful interventions have been identified, they can be implemented with confidence.





Planning Practice: Moving Past Normative Theories

“the science of muddling through”

Normative Theory: Mixed Land Use

“the co-location or immediate proximity of homes, workplaces and services in buildings, neighborhoods and districts—has become a central principle of good 21st-century city form; indeed, it might well be called a contemporary urban planning mantra.”



Quote: Hirt , S. A. (2016). Rooting out mixed-use: Revisiting the original rationales . *L and Use Policy* , 50 , 134 – 147 . doi: <https://www.sciencedirect.com/science/article/abs/pii/S0264837715002793>

Photo: <https://pixabay.com/photos/paris-restaurants-coffee-france-4694708/>

Ideal



Walkable, human scale, shops and housing combined

What can happen



Car centric strip mall within a residential area

Context: These Are Old Problems

“The moral influences surrounding homes are of great importance. The sordid atmosphere of **the ordinary business street is not a favourable environment in which to rear children**. Immediate and continuous proximity to the moving picture show, ...cigar store, saloon, **candy store, and other institutions for the creation and satisfaction of appetites and habits is not good for the development of the child**. Influences and temptations resulting from the proximity of such business to the homes may affect seriously the morals of the youth in the community....”

(New York Commission on Building Districts and Restrictions, 1917)

Quote: Hirt, S. (2016). Home, sweet home: American residential zoning in comparative perspective. In S. S. Fainstein (Ed.), *Readings in Planning Theory* (Fourth, pp. 293–323). John Wiley & Sons Ltd. P. 312

Photo:<https://pixabay.com/illustrations/backdrop-background-texture-design-874452/>

Early Planning Approaches

- Separated land uses created solely residential settings (suburbs)
- Car dependent society (sustainability)
- Areas with a high concentration of people living with low-income were removed (urban renewal)
- Racialized populations faced discrimination (bank loans, barriers in purchasing property)



Reference: Corburn, J. (2004). Confronting the challenges in reconnecting urban planning and public health. *American Journal of Public Health*, 94(4), 541–546.

<https://doi.org/10.2105/ajph.94.4.541>

Jacobs, J. (2016). The death and life of great American cities. In S. S. Fainstein (Ed.), *Readings in Planning Theory* (Fourth, pp. 94–109). John Wiley & Sons Ltd.

Photo: <https://www.pexels.com/photo/bright-flora-flowers-homes-533416/>

Understanding Planning Roles

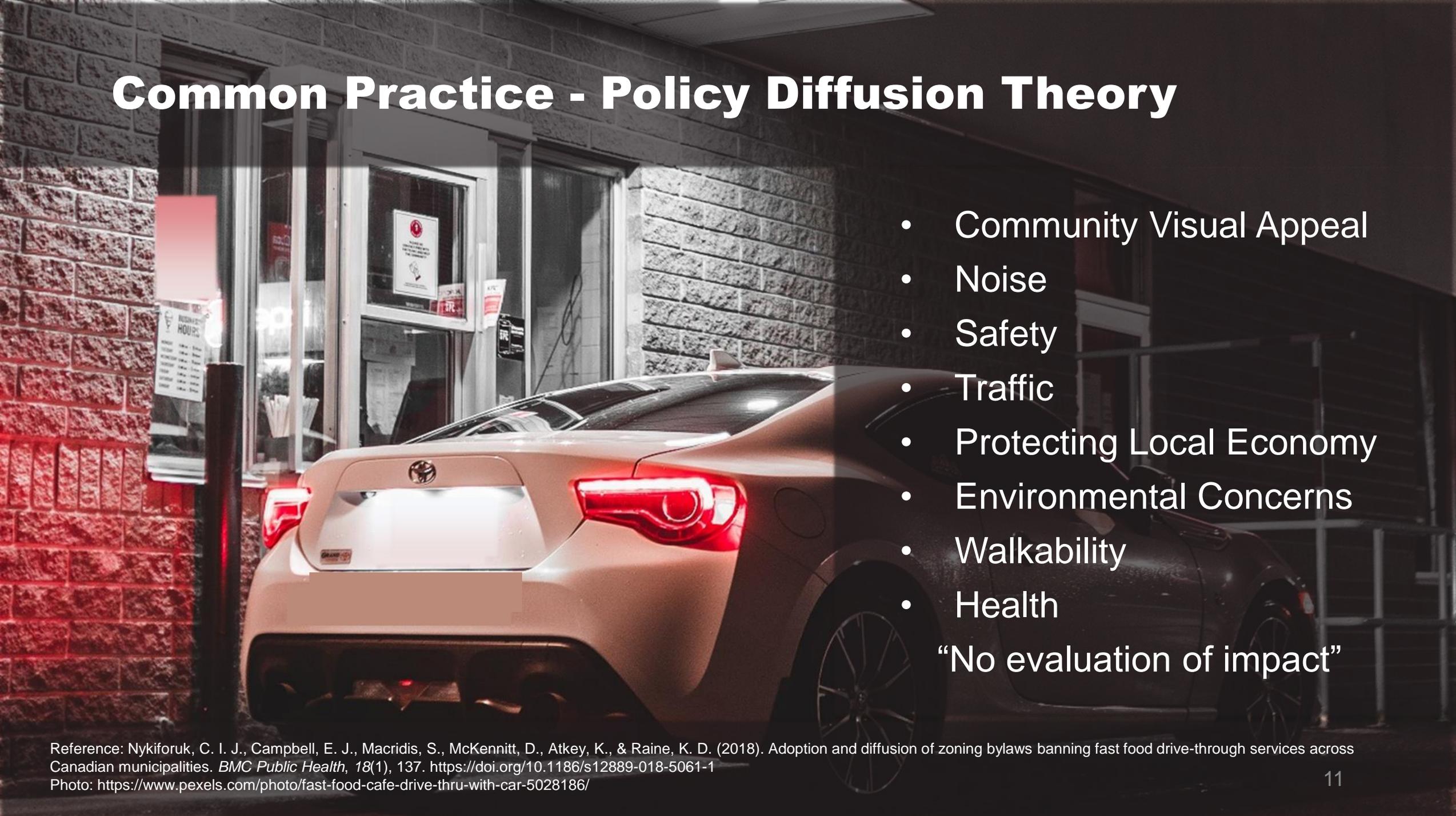
1. Planners are able to delegate land uses but not users.¹
2. Planners do not control where schools are placed.²
3. Restricting users does not align with mixed land use practice or economic development goals.³
4. Robust evidence to support restricting highly processed food sellers for the purposes of protecting health does not yet exist.³
5. Restricting users is likely to result in pushback from retail stakeholders (possibly litigation).³

Reference: 1: Makuch, S.M. (1989) Discrimination and Municipal By-Laws. Conference: Discrimination in the Law and the Administration of Justice. <https://ciaj-icaj.ca/wp-content/uploads/documents/import/1989/Makuch.pdf?id=1596&1645689517>

2. Council of Ministers of Education, Canada. <https://www.cmec.ca/299/education-in-canada-an-overview/index.html>

3. Keeble, M., Burgoine, T., White, M., Summerbell, C., Cummins, S., & Adams, J. (2021). Planning and Public Health professionals' experiences of using the planning system to regulate hot food takeaway outlets in England: A qualitative study. *Health and Place*, 67. <https://doi.org/10.1016/j.healthplace.2020.102305>

Common Practice - Policy Diffusion Theory



- Community Visual Appeal
- Noise
- Safety
- Traffic
- Protecting Local Economy
- Environmental Concerns
- Walkability
- Health

“No evaluation of impact”

A close-up photograph of dark purple leafy vegetables, likely kale or chard, with water droplets on their surfaces. The background is dark and slightly blurred, emphasizing the texture and color of the leaves.

Defining Success

For Food Systems Planning Interventions

The “Popsicle Test”

“An eight-year-old in the neighborhood should be able to walk to a store to buy a popsicle, without having to deal with fast-moving cars.”



Quote: Bartlett, R. (2003). Testing the ‘Popsicle Test’: Realities of Retail Shopping in New ‘Traditional Neighbourhood Developments’. *Urban Studies*;40(8):1471–1485.

Reference: Government of Canada (1026) Financial Performance – Canadian Industry Statistics – Convenience stores 44512 (Retrieved 2018).

Reference: Xin, J., Zhao, L., Wu, T., Zhang, L., Li, Y., Xue, H., Xiao, Q., Wang, R., Xu, P., Visscher, T., Ma, X., & Jia, P. (2021). Association between access to convenience stores and childhood obesity: A systematic review. *Obesity Reviews*, 22(S1). <https://doi.org/10.1111/obr.12908>

Reference: Minaker, L. M. (2016). Retail food environments in Canada: Maximizing the impact of research, policy and practice. *Canadian Journal of Public Health*, 107(Suppl 1), 5632. <https://doi.org/10.17269/cjph.107.5632>

Photo: <https://pixabay.com/photos/close-up-dessert-food-hand-ice-pop-1844880/>

Walkability and Food Outlets

“The **availability of a diverse combination of retail food destinations within walking distance from home may provide opportunities for adolescents to achieve more physical activity**, likely because of transport-based physical activity. Pending future research, these findings suggest that the role of the food environment on health extends beyond its influence on dietary behaviors to other health behaviors like physical activity.”



Quote: Johnson, A. M., Dooley, E. E., Ganzar, L. A., Jovanovic, C. E., Janda, K. M., & Salvo, D. (2019). Neighborhood food environment and physical activity among U.S. adolescents. *American Journal of Preventive Medicine*, 57(1), 24–31. [https://doi.org/S0749-3797\(19\)30042-X](https://doi.org/S0749-3797(19)30042-X) [pii]

Photo: <https://www.pexels.com/photo/woman-in-brown-classic-trench-coat-eating-mcdo-fries-during-daytime-139681/>

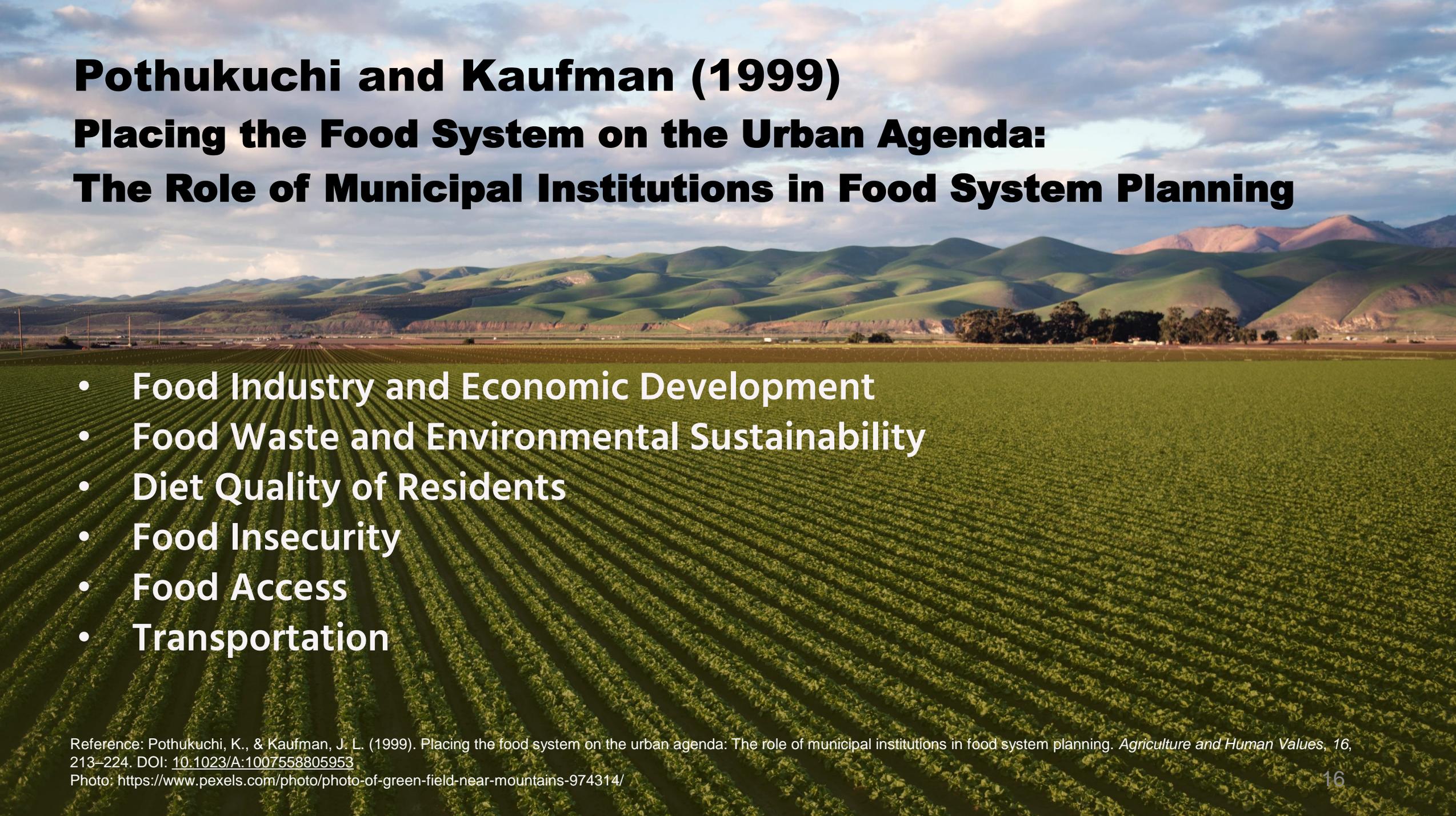


Evaluating

Food Systems Planning Interventions

Reference: Seasons, M. (2003). Monitoring and evaluation in municipal planning: Considering the realities. *Journal of the American Planning Association*, 69(4), 430–440.
<https://doi.org/10.1080/01944360308976329>

Photo: <https://www.pexels.com/photo/food-vegetables-texture-garden-6631959/>



Pothukuchi and Kaufman (1999)

Placing the Food System on the Urban Agenda: The Role of Municipal Institutions in Food System Planning

- **Food Industry and Economic Development**
- **Food Waste and Environmental Sustainability**
- **Diet Quality of Residents**
- **Food Insecurity**
- **Food Access**
- **Transportation**

Reference: Pothukuchi, K., & Kaufman, J. L. (1999). Placing the food system on the urban agenda: The role of municipal institutions in food system planning. *Agriculture and Human Values*, 16, 213–224. DOI: [10.1023/A:1007558805953](https://doi.org/10.1023/A:1007558805953)

Photo: <https://www.pexels.com/photo/photo-of-green-field-near-mountains-974314/>

Research Overview:

1. What food system planning interventions have been implemented since 1999?
2. How have the interventions been evaluated?
3. Have the interventions achieved their intended outcomes?
 - Economic Development
 - Sustainability
 - Access to Healthy Food
 - Diet Quality
 - Health Outcomes
4. Have there been any unintended negative consequences?

A close-up photograph of purple-leafed plants, likely kale or chard, with water droplets on the leaves. The image is dark and moody, with the purple leaves being the primary focus. The text is overlaid on the left side of the image.

Non-Retail Planning Interventions

For Healthy and Sustainable Food Systems

Addressing Food Waste

A close-up photograph of a wooden compost bin. The bin is filled with various vegetable scraps, including red and green tomatoes, orange carrots, and leafy greens. The wooden slats of the bin are visible, and the background is slightly blurred, showing more of the bin's structure and some green foliage on the right side.

Concept: Pothukuchi, K., & Kaufman, J. L. (1999). Placing the food system on the urban agenda: The role of municipal institutions in food system planning. *Agriculture and Human Values*, 16, 213–224. DOI: [10.1023/A:1007558805953](https://doi.org/10.1023/A:1007558805953).

Photo: <https://www.pexels.com/photo/red-and-white-flowers-on-brown-wooden-fence-5503336/>



Protect agricultural land to prevent sprawl and enhance community food security.

Concept: Perrotta, K. (2011). Public health and land use planning: How ten public health units are working to create healthy and sustainable communities. Prepared for the Clean Air Partnership (CAP) and the Ontario Public Health Association (OPHA).
Photo: <https://pixabay.com/photos/field-landscape-nature-panorama-3092043/>

Preserving Agricultural Lands

- Tension between preserving farmland vs housing.
- Court challenges can result in overturning the preservation policy.
- Citizens and municipality purchased land rezoned for development to preserve agricultural space.
- Policy is not impermeable but did guide development and stabilize land use.



Allowing urban agriculture within other land uses to enhance access to healthy food, especially in food deserts.

Concept: Perrotta, K.. (2011). Public health and land use planning: How ten public health units are working to create healthy and sustainable communities. Prepared for the Clean Air Partnership (CAP) and the Ontario Public Health Association (OPHA).

Photo: <https://pixabay.com/photos/food-garden-power-vegetable-garden-960070/>

Urban Agriculture

- Gardening may lead to small increase in vegetable and fruit intake.^{4,6,11}
- Participating in gardens may improve preference for, willingness to try, attitudes about, knowledge about, confidence in eating/preparing vegetables and fruit.^{5-7,11}
- Gardens can be used to educate on topics of science, environment, and nutrition.⁷
- Helpful for physical activity, social outcomes, mental health, sharing food with others.^{3,4,5,7}
- One study found an unexpected negative effect on mental health.⁸
- Public gardens/orchards may be underutilized if public is unsure of safety, quality, or appropriateness of harvesting produce.³

Urban Agriculture Continued

- Cost savings of growing compared to purchasing in a traditional store have not been quantified.²
- Laws and policies to promote or allow gardens may not increase prevalence of school gardens (dependent on staff/volunteers).^{10,13}
- Seen as a positive placemaking strategy, especially for vacant land.⁷
- Can be difficult for participants to accept temporary gardens.¹²

Urban Agriculture and Food Insecurity

- Different concept of the definition of food security (e.g., food access compared to adequate funds to purchase food).
- Several mentioned urban agriculture as a way to address food insecurity.^{1,5,8}
 - Positive - Food insecurity dropped from 31% to 3% (migrant farmers).¹
 - Negative - Amounts unlikely to alleviate food insecurity (clinic patrons).⁹
- Caution about promoting urban agriculture as a mechanism to address food insecurity.¹³⁻¹⁵
- “‘grow your own’ reinforces self-help ...absolving government of the responsibility to address the structural and institutional causes of food insecurity”.¹⁵



Alternative-Retail Planning Interventions

For Healthy and Sustainable Food Systems

Allow farmers to sell food on land zoned for agricultural uses



Concept: Perrotta, K. (2011). Public health and land use planning: How ten public health units are working to create healthy and sustainable communities. Prepared for the Clean Air Partnership (CAP) and the Ontario Public Health Association (OPHA).
Wegener, J., & Hanning, R. M. (2010). Concepts and measures of "alternative" retail food outlets: Considerations for facilitating access to healthy, local food. *Journal of Hunger & Environmental Nutrition*, 5, 158–173. <https://doi.org/10.1080/19320248>
Photo: <https://pixabay.com/photos/vermont-new-england-america-sky-4023803/>



Allowing farmers' markets within other land uses to enhance access to healthy food, especially in food deserts.

Concept: Perrotta, K. (2011). Public health and land use planning: How ten public health units are working to create healthy and sustainable communities. Prepared for the Clean Air Partnership (CAP) and the Ontario Public Health Association (OPHA).
Photo: <https://pixabay.com/photos/market-vegetables-market-stall-3860952/>

Allowing farmers' markets within other land uses to enhance access to healthy food, especially in food deserts.



Concept: Lucan, S. C., Maroko, A. R., Sanon, O., Frias, R., & Schechter, C. B. (2015). Urban farmers' markets: accessibility, offerings, and produce variety, quality, and price compared to nearby stores. *Appetite*, 90, 23–30. <https://doi.org/10.1016/j.appet.2015.02.034>
Photo: <https://unsplash.com/photos/TkixT1WOr5wall-3860952/>

Allowing a Vegetable and Fruit Market/Coupons

- Context of the WIC/SNAP/Seniors program to address food deserts.^{16,20}
Canadian farmers market/vouchers.¹⁷
- Coupons and farmers' markets effective to increase VF consumption.^{20,21}
- Use small denominations to allow for small purchases at multiple vendors (\$1 for greatest flexibility).^{17,18}
- Locating a VF market at a healthcare facility.¹⁶
- Added services such as recipes and education were beneficial.¹⁶⁻¹⁹
- Positive social experience.^{17,19,21} Some do not feel welcome.²²
- Higher income motivated to support local economy/farmers.^{19,21}
- Concerns over freshness, cost, variety and quality,^{18,19} and convenience.^{18,19,22}

Allowing Farmers' Markets

- Farmers' markets were primary nodes for farmers to sell goods.²⁴
- Larger markets attract farmers from further distances.²⁴
- Markets can act as community gathering place rather than a business.^{23,24,28}
- Some clients don't spend money at the market.²⁸
- Location can determine how successful the market will be.²⁷
- Markets do not always benefit the surrounding businesses.²⁷
- Can be successful in increasing access and lowering cost in a food desert.²⁵
- Most popular items are highly processed foods (baked goods).²⁸

Permit Mobile Vegetable and Fruit Sellers within Other Land Uses



Concept: Perrotta, K.. (2011). Public health and land use planning: How ten public health units are working to create healthy and sustainable communities. Prepared for the Clean Air Partnership (CAP) and the Ontario Public Health Association (OPHA).
Photo: <https://pixabay.com/photos/fruit-stall-vegetables-market-food-2703463/>

Permitting Mobile Vegetable and Fruit Sellers

- Small increase in vegetable and fruit consumption noted.²⁹
- Mobile markets may not always locate where they are most needed i.e., food deserts.³²
- Economic outcome indicators reflected individual level rather than business viability (\$ spent per individual, % gift cards redeemed).^{29,31}
- Measures of satisfaction, barriers, shopping behaviours, and shopping intentions (results generally positive).^{30,31}

Municipal Policies on Mobile Food Vendors

- Commissary
- Reduce licence fees for VF sellers
- Require at least one healthy meal choice



Reference: Wallace, E. (2021). Urban mobile food truck policies: reducing disparities and building a culture of health in the United States. *Journal of Public Health Policy*, 42(2).
<https://doi.org/10.1057/s41271-021-00274-1>

Photo: <https://www.pexels.com/photo/young-multiracial-couple-eating-takeaway-fast-food-and-walking-near-ethnic-chef-standing-near-van-5920734/>



Traditional-Retail Planning Interventions

For Healthy and Sustainable Food Systems

Adding or modifying existing traditional retail to ensure people have access to healthy food within a walkable distance.



Concept: Minaker, L., Shuh, A., Olstad, D. L., Engler-Stringer, R. Black, J. L., Mah, C. L. (2016). Retail Food Environments Research in Canada: A Scoping Review. *Canadian Journal of Public Health*; 107(Suppl 1):eS4-eS13.

Photo: <https://pixabay.com/photos/salad-vegetables-grocery-organic-1984947/>

Existing Retail Interventions (Healthy Corner Store)

- Context of being compliant as a SNAP approved retailer (US).⁴⁷
- Larger corporate stores may have an advantage over small independent stores through economies of scale.³³
- Increased access to healthier food.^{28,34,35,37,40-42,45,46,48,50}
- Some increased healthier food sales.^{34,36,44,46}
- Some reported no change in healthier food sales.^{35,41,45,50}
- Improvement in diet quality.³⁶
- Improvement in health outcomes.³⁶

Existing Retail Interventions (Healthy Corner Store)

- Food placement, promotion, education enhanced effectiveness.³⁴
- Funding to support initiatives led to stores in food deserts 50% of the time.⁴³
- Wholesalers are a significant part of these interventions as they determine what stores will have available to them.^{39,49}
- Challenges include food spoilage and waste, financial burden, low customer demand, and lack of infrastructure (fridge).^{34,39,40,50}

New Retail Interventions

- Opening a new retail location may provide local jobs.^{57,58}
- One study found that the new retail was accessed by locals.⁵⁵
- New stores are most convenient to those who do not have access to a car.⁵⁸
- People do not necessarily shop at the closest store.^{54,56,57}
- Price, safety, quality, cleanliness, welcoming, well-stocked.^{51,58}
- Mode of transportation determines how much customers buy.⁵¹

New Retail Interventions Continued

- Stores may not be able to stay open (low profit margins), market oversaturation.⁵²
- Neighbourhood availability of healthy food may not change.⁵⁴
Healthy food may become concentrated at one store.
- May not change diet or health outcomes.^{51,53,56,57}

Use Zoning to Limit Exposure to Highly Processed Foods



Concept: Canadian Institute of Planners. (2009). [Healthy Communities Practice Guide](#).

Reference: Hanning, R. M., Luan, H., Orava, T. A., Valaitis, R. F., Jung, J. K. H., & Ahmed, R. (2019). Exploring student food behaviour in relation to food retail over the time of implementing Ontario's school food and beverage policy. *International Journal of Environmental Research and Public Health*, 16(14), 2563–2574. <https://doi.org/10.3390/ijerph16142563>

Photo: <https://pixabay.com/photos/hamburger-snack-sandwich-fast-food-2667443/>

Use Zoning to Limit Exposure to Highly Processed Foods

- Zoning restrictions that favour full-service and fast casual restaurants led to better quality and more diverse restaurants.⁶³
- Zoning that restricts new stand alone fast food restaurants does not limit opening of new fast food retailers (can open in malls).⁶⁵
- Healthy food policies within schools are more effective if there are complimentary restrictive zoning policies.⁶⁶
- Planners cannot control the type of food served within stores, even if certain food outlets are limited (proximity/density).⁶⁰
- Virtually all nearby buildings can sell highly processed foods.⁶²
- Expectations need to be tempered for effectiveness of zoning policies in established areas. Likely only effective for new developments.^{59,61,64}

Food Delivery Offsets Benefits of Geographical Interventions



Concept: Brar, K., & Minaker, L. M. (2021). Geographic reach and nutritional quality of foods available from mobile online food delivery service applications: novel opportunities for retail food environment surveillance. *BMC Public Health*, 21(1). <https://doi.org/10.1186/s12889-021-10489-2>

Widener, M. J. (2018). Spatial access to food: Retiring the food desert metaphor. *Physiology & Behavior*, 193(Pt B), 257–260. <https://doi.org/10.1016/j.physbeh.2018.02.032>

Photo: <https://pixabay.com/photos/fast-food-delivery-online-service-6974507/>

Possible Retail Interventions in Canada

- Canada has 16 sq.ft. per person compared to 5 sq.ft. per person in Europe.
- Mixed land use not always successful for retail, may sit vacant.

Questions:

- Is there a business case for new retail to be permitted in this space?
- Could this street level space be used for something other than retail?

Reference: <https://www.thestar.com/business/2018/03/11/online-shopping-not-the-only-factor-behind-canadas-dying-malls.html>

<https://www.fastcompany.com/90573407/many-u-s-stores-will-close-forever-thats-a-good-thing>

Grant, J., & Perrott, K. (2011). Where is the cafe? The challenge of making retail uses viable in mixed-use suburban developments. *Urban Studies*, 48(1), 177–195.

Photo: <https://pixabay.com/photos/close-up-dessert-food-hand-ice-pop-1844880/>

Small Food Business Processing/Learning Space



Quote: <https://www.pps.org/article/a-market-place-for-everyone>

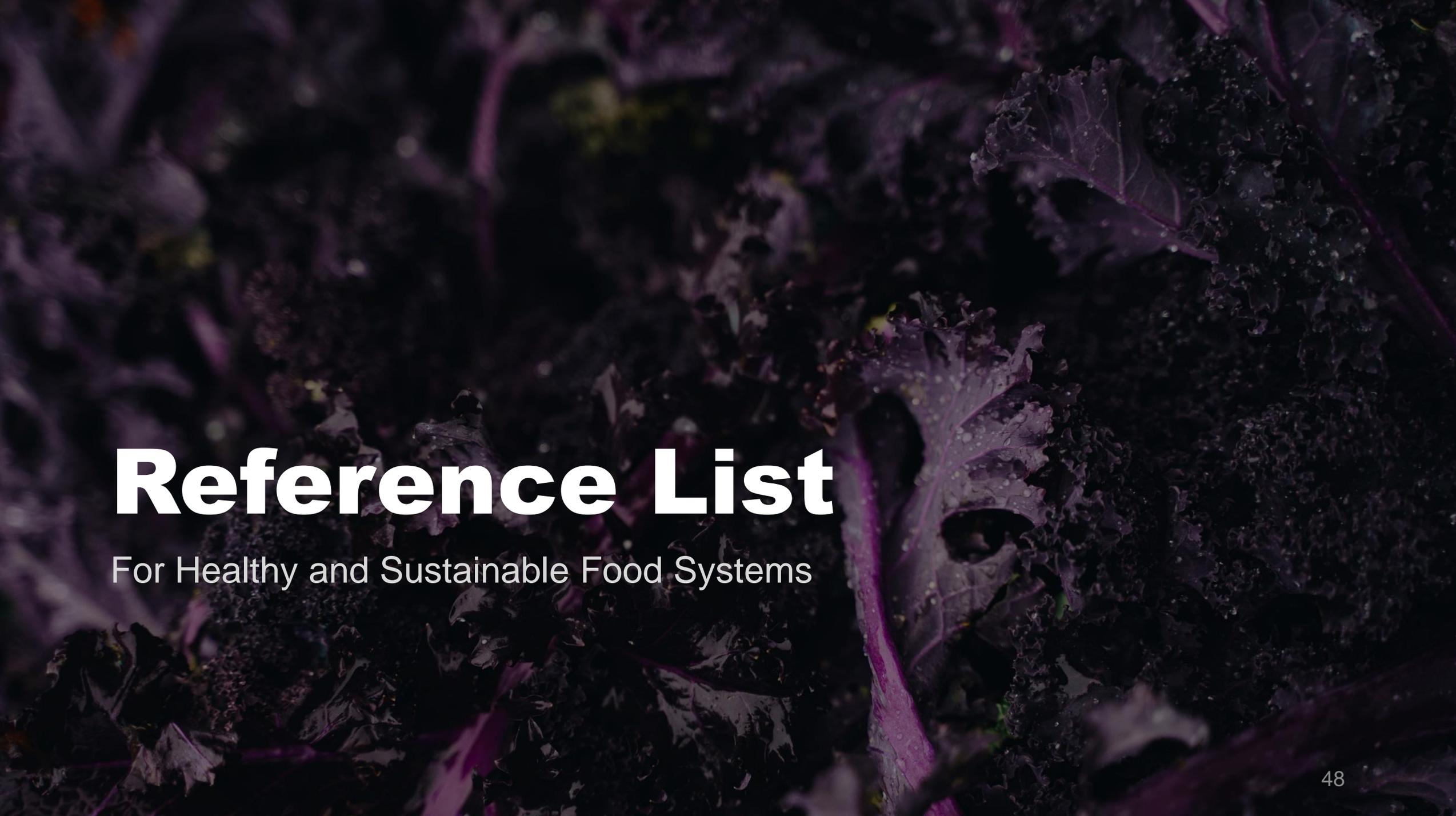
Photo: <https://unsplash.com/photos/TbmwLOWj8BE>

Final Considerations

- Evaluation can be used to test assumptions about the effectiveness of food system and other planning interventions.
- Recommend that all outcomes be evaluated to detect unintended negative consequences: access to healthy food, diet quality, health outcomes, food system sustainability, and economic development.
- Avoid trying to fix social problems (lack of income) with geographical interventions (food proximity).

A close-up photograph of dark purple, textured leaves, likely a variety of kale or similar leafy green. The leaves are covered in small water droplets, giving them a glistening appearance. The background is dark and out of focus, emphasizing the intricate details of the leaf surfaces.

Questions



Reference List

For Healthy and Sustainable Food Systems

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Allowing a Vegetable and Fruit Market/Coupons

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