PROJECT UPDATE

New England Feeding New England

A project of the New England State Food System Planners Partnership

… of which VT Farm to Plate / Vermont Sustainable Jobs Fund is a Member

January 2022

https://nefoodsystemplanners.org/

New England Feeding New England

PROJECT GOAL

By 2030, 30% of the food consumed in New England is produced/harvested/caught within New England.

Our collective effort will focus on expanding and fortifying the region's food supply and distribution systems in an equitable and inclusive way that ensures the availability of adequate, affordable, socially and culturally appropriate products under a variety of rapidly changing climate, environmental, and public health conditions.

NOTE: The VT Agriculture & Food System Strategic Plan 2021-2030 is fully aligned with and integral to this regional project.

Project Outputs

- ➔ Relevant, timely foundational data and analysis provided for each state and the 6-state region, which can be used for public, private, nonprofit, community, and philanthropic planning and investment decisions.
  - ◆ NOTE: this will not be a formal PLAN with strategies

- ➔ Broadened and strengthened networks within and between states -- working collaboratively to establish regionally-coordinated and prioritized implementation goals, objectives, and activities.

- ➔ Regional coordination among state-level, public sector decision makers on critical topics and priorities related to the development of a just and resilient regional food system.

Research Update

- 14-member Research Team assembled and working across 5 research areas
- Research to inform strategy development, investment and, policy recommendations that support increasing consumption of food produced in the region to 30% by 2030
- Year-long, multi-layered research to better understand the New England food supply chain, consumer and retail behavior and identify what might be possible by 2030

Research Team … who's involved?

Dietary Needs Team

Brian Donahue is Associate Professor of American Environmental Studies on the Jack Meyerhoff Fund at Brandeis University, and Senior Conservationist at Highstead. Co-author of the New England Food Vision for FSNE. (Team Lead)

Dr. Sarah Amin is an Assistant Professor and Director of Community Nutrition Education (SNAP-Ed & EFNEP) in the Department of Nutrition and Food Sciences at the University of Rhode Island. Her research lies at the intersection of health promotion and community-based research.

Laura Barley is the Program Manager for American Farmland Trust's Farms for a New Generation initiative and co-authored the 2020 *Farms Under Threat: New England* report.

Scott Richardson – Northbound Ventures – brings a broad range of finance, operations and strategy experience serving the private, philanthropic and public sectors and has expertise in working to improve public school nutrition.

Research Team … who's involved?

Market Demand Team

Holly Fowler is Co-founder and CEO of Northbound Ventures Consulting, LLC, a sustainable communities and food system consulting firm that works with clients who have ambitious goals to improve health and economic outcomes, primarily for low-income, underserved populations and areas. (Team Lead) THANK YOU Kendall Foundation!

Laura Barley is the Program Manager for American Farmland Trust's Farms for a New Generation initiative and co-authored the 2020 *Farms Under Threat: New England* report.

Ramón Borges-Méndez is an Associate Professor of Urban Planning and Community Development at the International Development, Community, and Environment Department at Clark University (Worcester, MA), where he is coordinator of the undergraduate Urban Studies concentration, and he teaches graduate courses on food systems, inequality, labor economics, migration, and globalization.

Hannah Leighton is the Director of Research and Evaluation at Farm to Institution New England, a six-state cross-sector regional network that is transforming the food system by mobilizing the power of New England institutions.

Scott Richardson – Northbound Ventures – brings a broad range of finance, operations and strategy experience serving the private, philanthropic and public sectors and has expertise in working to improve public school nutrition.

Scott Sawyer, PhD, is the research director for the San Diego Food System Alliance, where he helped to develop San Diego County Food Vision 2030. Scott also is one of the principal authors of the first VT Farm to Plate Strategic Plan.

Joshua Stoll is an assistant professor in the School of Marine Sciences at the University of Maine. His research focuses on questions about coastal community resilience, ocean governance, fisheries policy, and food systems.

Research Team … who's involved?

Production Team

Chris Peters works with the USDA ARS, and is the research leader for the Food Systems Research Center on the University of Vermont campus. He comes to the USDA and UVM from the Friedman School of Nutrition Science and Policy at Tufts University where he taught in the Agriculture, Food and Environment graduate degree program for 11 years. (Team Lead)

Laura Barley is the Program Manager for American Farmland Trust's Farms for a New Generation initiative and co-authored the 2020 *Farms Under Threat: New England* report.

Sarah Schumann is the principal of Shining Sea Fisheries Consulting, a mission-driven research and education firm specializing in fisheries, wild seafood, and environmental information and decision-making.

Ashley McCarthy is a Postdoctoral Research Associate in the Department of Nutrition and Food Sciences at the University of Vermont. Her interdisciplinary research focuses on meeting the food and nutrition needs of the growing population while improving sustainability and resiliency to disruptions in the food system.

Eric von Wettberg is an associate professor in Plant and Soil Science and the director of the Food Systems graduate program at the University of Vermont. He has studied the genetics and agroecology of a number of legumes over the past decade, with an aim towards improving the climate reliance of nutritious, culturally meaningful crops. He is supervising **April McIlwaine** who is assisting on this project and is a masters student at the University of Vermont in the Food Systems program.

Ramón Borges-Méndez
Brian Donahue
Scott Sawyer

Research Team … who's involved?

Other Analyses

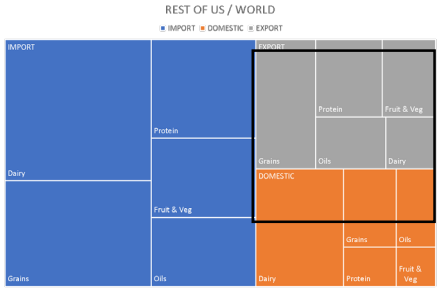
Scott Sawyer

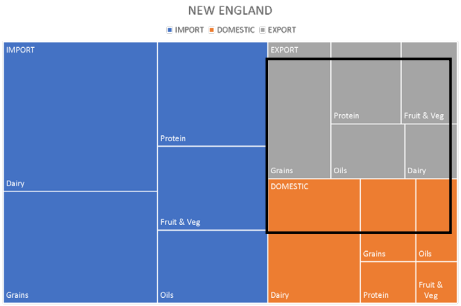
- Jobs & Establishments in each NE State + Total NE
- Update food flows data – US / NE flows + within NE
- Determine the level of occupational segregation by race/ethnicity related to employment

Nic Rockler – economist and principal in Kavet, Rockler & Associates

- Analysis of New England states food industries' data, based on figures for employment and sales, from which annualized growth rates for 2007, 2012 and 2017, using IMPLAN model. Single state data tables, as well as cross-sectional state tables for the different industries will be provided. These data will form the observed food industries direct impact on the states' economies from which industry (or product, as they are coincident) multipliers can be estimated (for indirect and induced impacts).

Production & Food Flows





WHAT WE NEED FOR NEW ENGLAND IN 2030...

x% from *Domestic "Raw"* + x% from *Food Business "Processed" or "Unique"*

DAIRY
FRUIT & VEG
PROTEIN
GRAINS
OILS
DIY

DAIRY
FRUIT & VEG
PROTEIN
GRAINS
OILS
FARM DTC

DAIRY
FRUIT & VEG
PROTEIN
GRAINS
OILS
PROC / MFG

$

Population Projections

IMPLAN

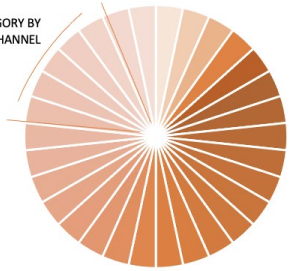
$

DAIRY
FRUIT & VEG
PROTEIN
GRAINS
OILS
DISTRIBUTION

$

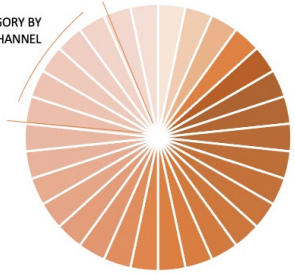
CURRENT

CATEGORY BY MARKET CHANNEL



PREFERRED

CATEGORY BY MARKET CHANNEL



Dietary Needs

Market Demand

INfluences

- AGE
- INCOME
- GEOGRAPHY
- RACE/ETHNICITY
- AVAILABLE MARKETS
- PREFERRED MARKETS
- DEGREE OF CHOICE AUTONOMY

INSTITUTION	GROCERY	RESTAURANT	PANTRY
DAIRY	DAIRY	DAIRY	DAIRY
FRUIT & VEG	FRUIT & VEG	FRUIT & VEG	FRUIT & VEG
PROTEIN	PROTEIN	PROTEIN	PROTEIN
GRAINS	GRAINS	GRAINS	GRAINS
OILS	OILS	OILS	OILS

$

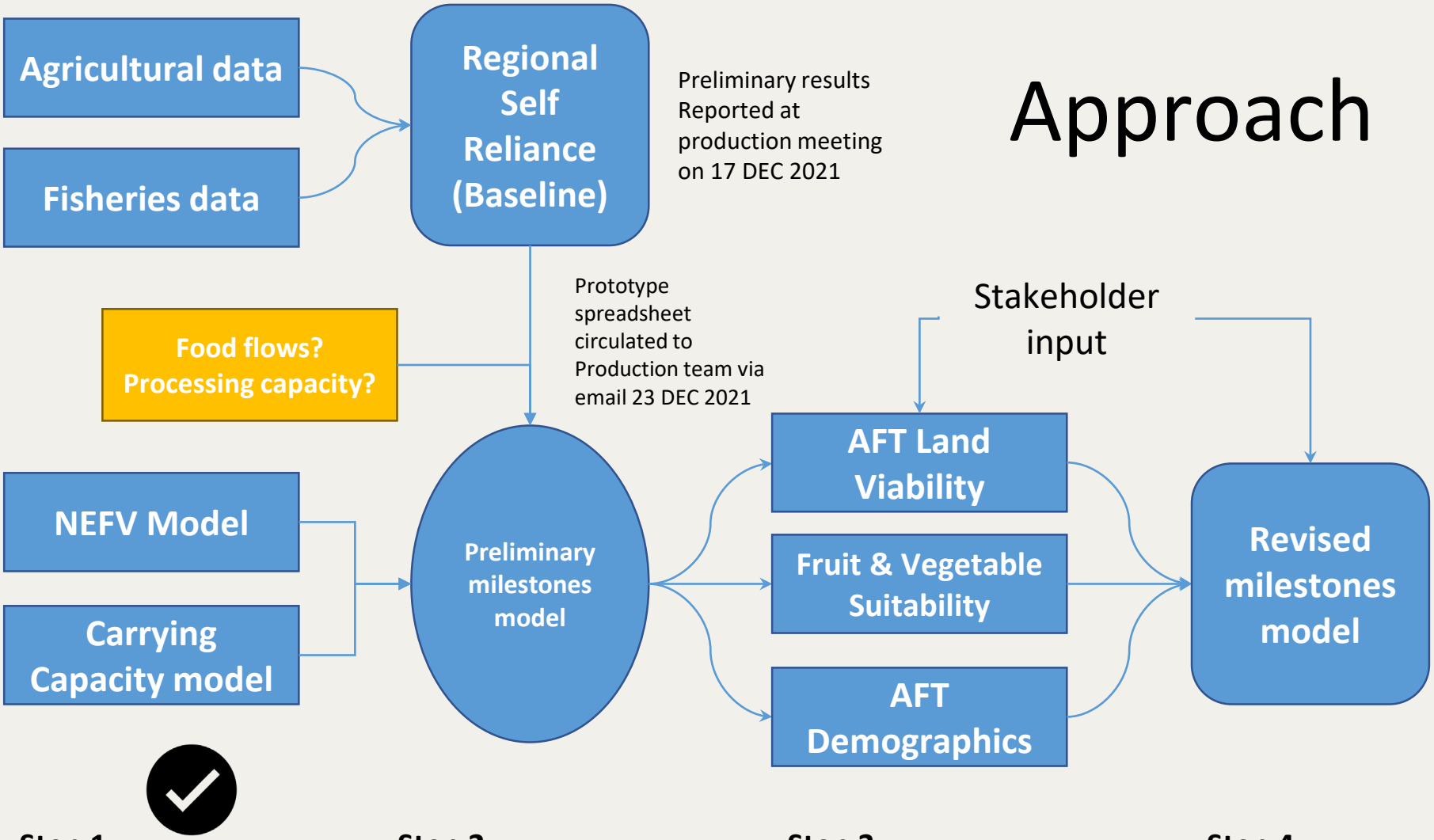
Dietary Needs

- Updating the 2014 New England Food Vision Diet Methodology (based on USDA MyPlate) with current data to determine what are New Englanders eating today and updating the “acreage footprint” – how much total acreage is needed to produce what we eat that is possible to be grown, raised, harvested, manufactured in NE.
  - The NEFV projected how many acres would be needed to produce enough food in NE so that 50% of the caloric needs of New Englanders was met from food produced within the region by 2060.

- Then we will project two diets for 2030 (to achieve 30% NE consumption):
  - Business As Usual -- that continues present eating trends (e.g., dairy, beans, nuts, beef/poultry, etc.)
  - Aspirational healthier diet that might reasonably be achieved (more regional reliance)

- We will also consider pounds (within each food category) and dollars (to compare all categories).

Approach



Step 1: Get oriented to existing data and analyses

Step 2: Conduct NENFE baseline and develop preliminary milestones model

Step 3: Integrate additional sector-specific data into model

Step 4: Create a revised model capable of scenario testing

Table 3. Northeast regional mean self-reliance of animal-based products, 2001–2009.

Self-reliance category	Mean regional production (10^6 kg live weight)	Mean regional consumption (10^6 kg live weight)	Mean RSR (%)[1]
Dairy[2]	13,043	17,079	76
Eggs[3]	676	946	71
Shellfish	166	372	45
Turkey	187	622	30
Chicken	1107	3827	29
Fish	229	988	23
Lamb	12	69	17
Beef	717	4426	16
Pork	388	2552	15
Total	1836	3431	36

[1] Percent of regional consumption met by regional production, (production/consumption)*100.
[2] Fluid milk equivalent.
[3] Chicken eggs.

SOURCE: Griffin, T., Conrad, Z., Peters, C. Ridberg, R., and Tyler, E.P. 2015. Regional self-reliance of the Northeast Food System. *Renewable Agriculture and Food Systems* **30**(4): 349-363.

Table 1. List of plant-based foods produced in Northeast USA and grouped by regional self-reliance[a]

Less than 5%	5–20%	20–50%	50–100%	100% and greater
Apricots, All	Asparagus, Fresh	Cherries, Tart, Processing	Apples[b]	Barley[c]
Asparagus, Processed	Beans, Dry Edible	Collards, Fresh	Beans, Snap[b]	Beets, Processed
Broccoli, All	Carrots, Processing	Cucumbers and Pickles[b]	Blueberries, Fresh	Blueberries, Processing
Canola, oil	Cauliflower, All	Kale, Fresh	Brussels Sprouts, Fresh	Cabbage[b]
Carrots, Fresh	Cauliflower, Fresh	Melons, Watermelon, Fresh	Eggplant, Fresh	Cranberries, All
Cauliflower, Processing	Corn, food uses[d]	Oats	Escarole/Endive, Fresh	Mushrooms, Agaricus, All
Celery, Fresh	Mustard Greens, Fresh	Onions, Fresh	Grapes, Processed	Sweet Corn, Fresh
Garlic, Fresh	Pears, All	Onions, Processing	Maple Syrup	
Grapes, Fresh	Potatoes, Processed	Peaches, All	Rye	
Honey	Raspberries, All	Peas, Green, Processing	Spinach, Processing, Frozen	
Lettuce, Head, Fresh	Soybean, oil	Peppers, Bell, Fresh		
Lettuce, Leaf, Fresh	Strawberries, Fresh	Potatoes, Fresh		
Melons, Cantaloupe, Fresh[e]	Sweet Potatoes, Fresh	Radishes, Fresh		
Melons, Honeydew, Fresh	Tomatoes, Fresh	Spinach, Fresh		
Okra, Fresh	Turnip Greens, Fresh	Squash, Fresh		
Peas, Dry	Wheat	Sweet Corn, Processing		
Peppers, Other, Processing				
Tomatoes, Processing				

[a]Regional self-reliance is the ratio of total regional production to total regional consumption (Griffin *et al.*, 2015). Expressed here as a percentage.
[b]Both fresh and processed forms.
[c]Assumes barley grown in the region is used for grain products (e.g., pearl barley) only.
[d]Includes use for grain, oil, starch and sweeteners. Excludes feed.
[e]Includes muskmelon.

SOURCE: Peters, C.J., Gómez, M.I., and Griffin, T.S. 2021. Roles of Regional Production in a Global Food System. *Renewable Agriculture and Food Systems* **36**(5): 432-442. https://doi.org/10.1017/S1742170519000401

Food group	Food commodity	Consumption, New England (lbs/yr)	Production, New England, current (lbs/yr)	Production, New England, 2030 (lbs/yr)	Target self-reliance, 2030 (% of consumption)	Land footprint, cultivated cropland (acres)	Land footprint, perennial forage cropland (acres)	Land footprint, permanent pasture (acres)
Major products (national production center, seasonally-important supplier, or regional scale product)								
Fruit	Cranberries	from Diet Team	from net-balance analysis	Equals target self reliance x consumption.		Calculated values based on target production, feed requirements, and crop yields.		
Dairy	Fluid milk							
Vegetable	Potatoes							
Sweeteners	Maple syrup							
Potential for regional increase								
Grains	Corn	from Diet Team	from net-balance analysis	Calculated value. Equals target self reliance x consumption.		Calculated values based on target production, feed requirements, and crop yields.		
	Oats							
	Wheat							
Vegetables	Broccoli							
	Lettuce							
	Tomatoes							
Fruits	Apples							
	Peaches							
	Strawberries							
Protein-rich foods	Beef							
	Chicken							
	Eggs							
	Dry beans							
	Tree nuts							
Discretionary	Added fats							
	Sweeteners							
	Alcohol							
Foods which must be imported								
Fruit	Bananas	from Diet Team						
Beverage	Coffee							
Protein	Peanuts							

Food group	Amount, New England Sourced (lbs/yr)	Regional Self-reliance, 2030 (%)
Grains		
Vegetables		
Fruit		
Dairy		
Protein-rich foods		
Discretionary		
Total		

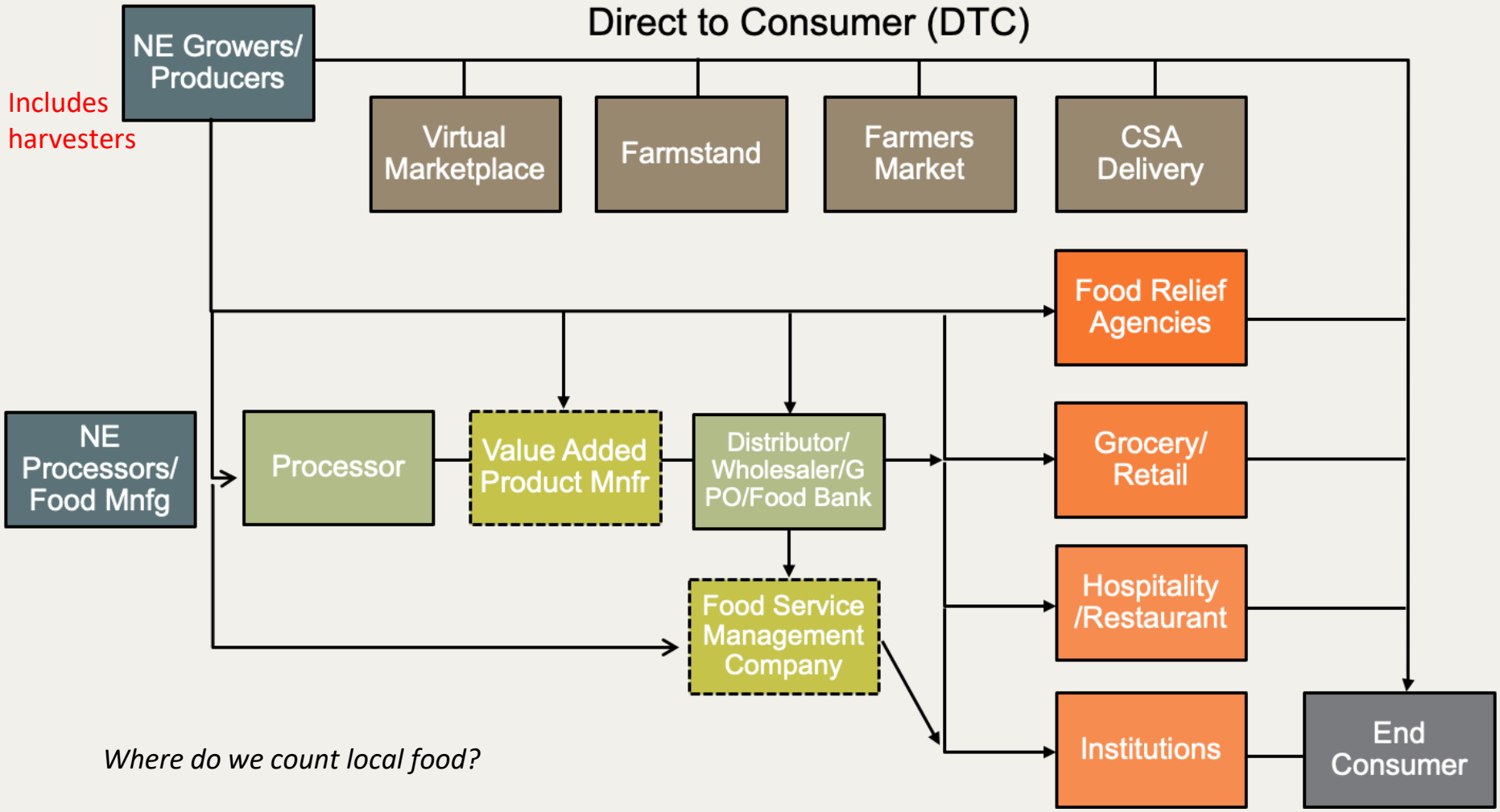
Land category	Area required (acres)	Area available (acres)
Cropland, cultivated		
Cropland, perennial		
Pasture		

Production milestones worksheet - prototype

Market Demand

1. What are the market channels/access points through which people get food?
2. What are people eating via these different market channels?
3. How much of what we eat is represented by each market channel (%, $)?
4. What are the consumer profiles associated with each market channel?
5. What are the decision points for sourcing local food in each channel?
6. What are opportunities for each market channel to offer local foods (e.g., volume, type, format)?
7. How are market channels aligned with the consumer base?
8. What are retailers, institutions saying they would like to purchase (local) if the products and distribution network existed in each state using existing data sources?
9. What would need to happen to align market channel local food offerings to 30 by 30 goals?

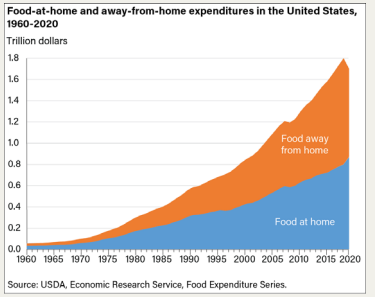
Market Channels



Where do we count local food?

Demand by End Consumer

		%	Millions of $
FAH (57%)	Grocery stores	34%	241,081.89
	Warehouse clubs and supercenters	12%	85,335.01
	Other stores and foodservice	5%	34,423.60
	Mail order and home delivery	2%	13,782.67
	Other food stores	1%	9,196.60
	Convenience stores	1%	7,336.79
	Mass merchandisers	1%	3,945.78
	Direct selling by farmers, manufacturers, and wholesalers	0%	3,169.19
	Home production and donations	0%	1,037.51
FAFH (43%)	Limited-service restaurants	19%	133,807.88
	Full-service restaurants	12%	83,444.88
	Schools and colleges	4%	27,301.52
	Food furnished and donated	3%	18,431.61
	Retail stores and vending	2%	15,278.07
	Recreational places	1%	8,244.76
	Hotels and motels	1%	7,890.88
	Other FAFH sales, NEC	1%	5,884.56
	Drinking places	0%	1,034.51
		100%	**$ 700,627.70**



Note: Currently only national averages

Data Source: USDA ERS Food Expenditures Series (2020)

Demand Opportunity

VARIABLE	K-12	COLLEGE	HOSPITALS	PRISONS / JAILS	ASST LIVING	RESTAURANTS	GROCERY
"TOTAL UNIVERSE"	• TOTAL ENROLLMENT	TOTAL ENROLLMENT	TOTAL BEDS (+ STAFF)	TOTAL BEDS (+ STAFF)	TOTAL BEDS (+ STAFF)	TOTAL SEATS	POPULATION DENSITY/ INCOME / ACCESS
x POTENTIAL AUDIENCE	• AVERAGE DAILY ATTENDANCE		OCCUPANCY RATE (+ STAFFING LEVEL)	INCARCERATION RATE (+ STAFFING LEVEL)	AVERAGE DAILY ATTENDANCE	AVERAGE DAILY ATTENDANCE	AVERAGE TRANSACTIONS
x ESTIMATED DAILY AUDIENCE	• MEAL PARTICIPATION %	MEAL PARTICIPATION %	MEALS PER DAY	MEALS PER DAY	MEALS PER DAY	MEALS SERVED	AVERAGE ITEMS SOLD
x ANNUAL TIME UNITS	• ~ 180 SCHOOL DAYS • ~ 40 SUMMER DAYS	~ 150 DAYS	AVERAGE STAY (DAYS)	~ 365 DAYS	~ 365 DAYS	~ 250 DAYS	~360
x ITEM EXPOSURE	• % OF DAYS ON MENU	• % OF DAYS ON MENU	% OF ITEM ON MENU	% OF ITEM ON MENU	% OF ITEM ON MENU	• % OF DAYS ON MENU	
x LOCAL EXPOSURE	• % LOCAL	• % LOCAL	% OF ITEM THAT IS LOCAL	% OF ITEM THAT IS LOCAL	% OF ITEM THAT IS LOCAL	• % LOCAL	• % LOCAL
x ITEM UPTAKE	• % OF STUDENTS SELECTING ITEM	• % OF STUDENTS SELECTING ITEM	% OF SELECTED MEALS CONTAINING ITEM				% OF LOCAL ITEMS SELECTED SOLD
x PRICE PER UNIT	• PRODUCT PRICE	• PRODUCT PRICE		N/A			• PRODUCT PRICE
= PRODUCT REVENUE	• TOTAL LOCAL SPEND ON ITEM	• TOTAL LOCAL SPEND ON ITEM		N/A			• TOTAL LOCAL SPEND ON ITEM
+ OTHER PRODUCT REVENUES	• TOTAL LOCAL SPEND ACROSS ITEMS	• TOTAL LOCAL SPEND ACROSS ITEMS		N/A		***Work in progress***	

What is unique about each market for local?

Additional Research Needed (not yet funded)

- Add to VT with local food counts in ME, MA, RI, CT, and NH so we can estimate current % regional food consumption
- Infrastructure Inventory
  - Inventory/map by market channel type (#, name, location)
  - Inventory/Gap analysis of key processing, cold chain and distribution infrastructure
- Financing Options

Final Report Outline (very draft!)

New England's Food System

- Size of food system in NE
  - IMPLAN results + economic opportunity
  - Jobs
  - Establishments
- Regional Resiliency (climate + pandemics)
- Regional Competitiveness and Ownership
- Future of our Landscape and Land Uses
- Equity – who has access to food / local food
- Health of the population

Methodology / Assumptions / Population Projections / Data

Research Findings

- IMPLAN results + economic opportunity
- Jobs & Establishments
- Dietary Needs
- Production
- Market Demand

Final Report Outline (very draft!)

Research Findings, Cont.

- Opportunities for growth
- Barrier to be overcome
- Graphics – wedges or other diagrams – NOW and FUTURE state

Recommendations

- Low hanging fruit strategies
- Additional Needs (additional research, data gathering, infrastructure)

Appendices – with all the details!

- IMPLAN by state + region as a whole
- Jobs & Establishments
- Dietary Needs
  - 2 Plates – composition
  - Race / Class
  - Cost to eat this way
- Production Milestones by State / Category
- Market Demand + Milestones by Market

Your Turn …

What are your Questions?

https://nefoodsystemplanners.org/