

Leveraging Resources and Collaborative Efforts between Communities and Public Authorities for Food Relief and Educational Programming During the COVID-19 Pandemic

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#SNEB2021: Raising Reliance and Resilience



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Outline

- Background
- Nourish Lexington's efforts with community and public authorities
- Evaluation of Nourish Lexington during the pandemic
- College student assessment during the pandemic
- International work – UFWH and PUSH

Define It!

- Some key definitions to keep in mind throughout our time together.

- Food Security

“Access at all times to enough food for an active healthy life”

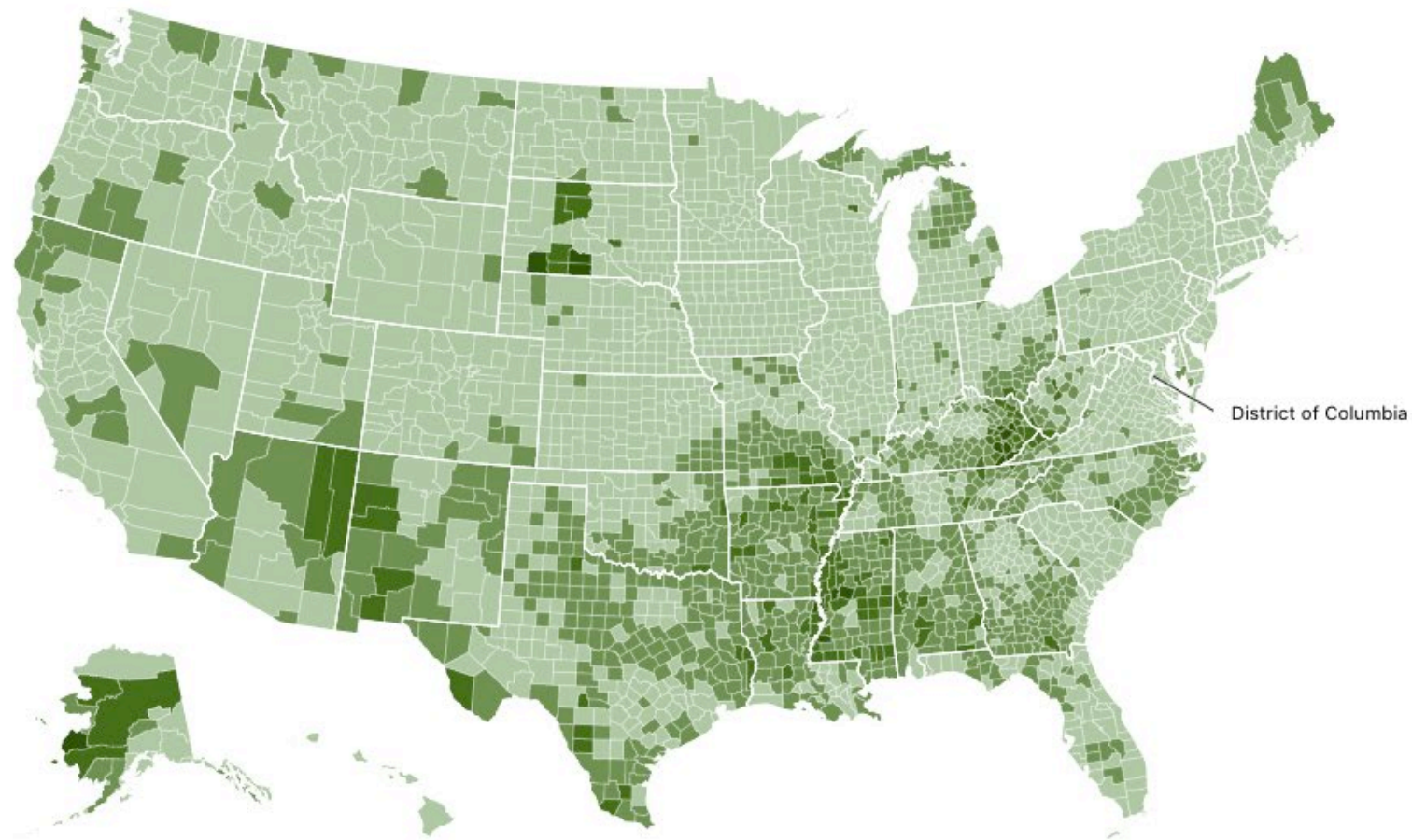
Must include at a minimum (a) the ready availability of nutritionally adequate and safe foods” and (b) an assured ability to acquire acceptable foods in socially acceptable ways

- Food Insecurity

“Exists whenever the availability of nutritionally adequate and safe foods or the ability to acquire foods in socially acceptable ways is limited or uncertain”

- Hunger

“The recurrent and involuntary lack of food that may causes the uneasy or painful sensation caused by lack of food”



Food Insecurity Rates

4-14%

15-19%

20-24%

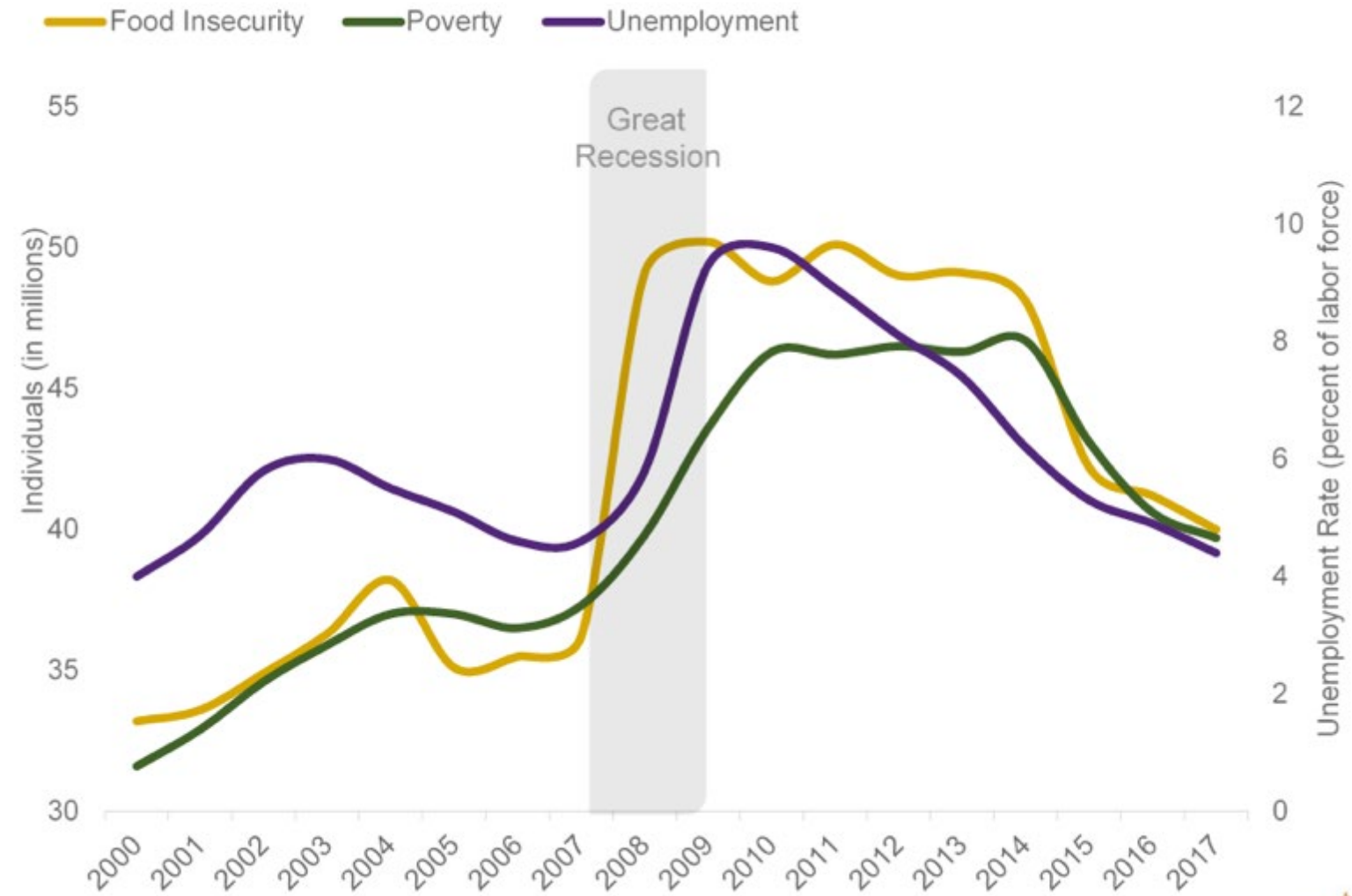
25-29%

30% +

2019 Overall County Food Insecurity In The United States



Food Insecurity, Poverty, and Unemployment, 2000-2017



Sources: [USDA ERS](#), [US Census Bureau](#), [BLS](#), respectively



Relationship
between poverty
and food insecurity

COVID-19

According to the Bureau of Labor Statistics, in the spring of 2020, 47 of 50 states reported historically high unemployment rates, surpassing levels experienced during the Great Depression

Consequently, within the first month of the pandemic, about 31% of adults in the U.S. reported that they could not pay rent, mortgage, or utility bills, or were forced to go without medical care



A community in need

- At the beginning of 2020, one in six Kentuckians experienced food insecurity, and even more had limited access to fresh, locally sourced food.
- FoodChain, a non-profit in Lexington, KY, was already working to improve community access to fresh ingredients on a small but growing scale. Then the pandemic hit.
- While the effects of the pandemic have been felt far and wide, they have most severely impacted historically marginalized and vulnerable populations.
- Food insecurity increased at the same time that traditional food resources, such as school lunch programs, were upended.
- The need in our local food economy and our community required action.



Mission: To forge links between community and fresh food through education and demonstration of sustainable food systems.



Already supporting local farmers



Commercial Kitchen



Received donations of food from shuttered restaurants



Connections to community partners



Workforce development program

FoodChain joined with Keeneland, VisitLEX, and the Murry Foundation to form a partnership called Nourish Lexington to alleviate hunger during the pandemic.

The program was established to distribute fresh, locally sourced, and nutritious meals while providing paid work for furloughed hospitality workers.

This program launched on April 8, 2020 and continues its efforts today.



How we collaborated

- City government
 - Distribution site Identification
 - Connections to Farmers
 - Establishment of Fayette County Food Map
 - Connections to other funders
- Local non-profits
 - Distribution
 - Referrals
 - Transportation
 - Assistance
 - Education
- Public Schools
 - Providing meals for parents
 - Alternative sites for students
 - Extra snacks for at-risk youth



Meal Distribution Sites

- Accessible to the community
- Work with members of the community to identify and spread the word
- Both walk-up and drive-thru
- Located in low income neighborhoods and food deserts
- Nourish the Backstretch
- Translated signs and information
- No limits on number of meals, encouraged taking meals for neighbors
- Mobile routes added in summer
- Meal Delivery added in winter



Filling the gaps

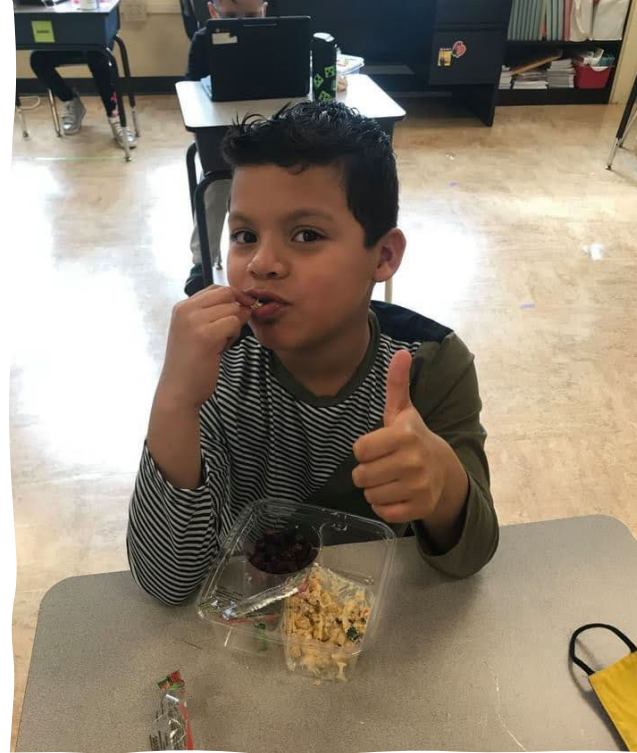
Meal distribution during school breaks and federal holidays

Distribution of masks and hand sanitizer with meals

Fresh food bags with recipes

Education and hands on activities

USDA Farms to Families Food Box distribution



FoodChain pivots during the pandemic

- Processing of local (and rescued) produce
- Workforce development
- Restaurant mentoring
- Cooking classes
- Fishing to Feed
- In the window education
- Launch of meal and salad kits
- Development of new programs



By the
numbers

How Nourish Lexington supports the *whole* Community

Farmers



27 farms
supported in
purchasing
more than
20,000 pounds
of local produce

Restaurants



26 Local Food
Businesses
Supported:
Restaurants,
Caterers, Local
Food
Distributors

Unemployed Hospitality Workers



45 Hospitality
Workers paid directly
through hiring or
paid shifts in the
FoodChain kitchen

Individuals and Families



302,000 meals
served (and
counting!)
101,000 for kids
28,500 for seniors

What makes Nourish Lexington different



FOCUS ON FRESH
AND SCRATCH
MADE MEALS



SOURCING LOCAL
INGREDIENTS



KEEPING
RESTAURANTS IN
BUSINESS



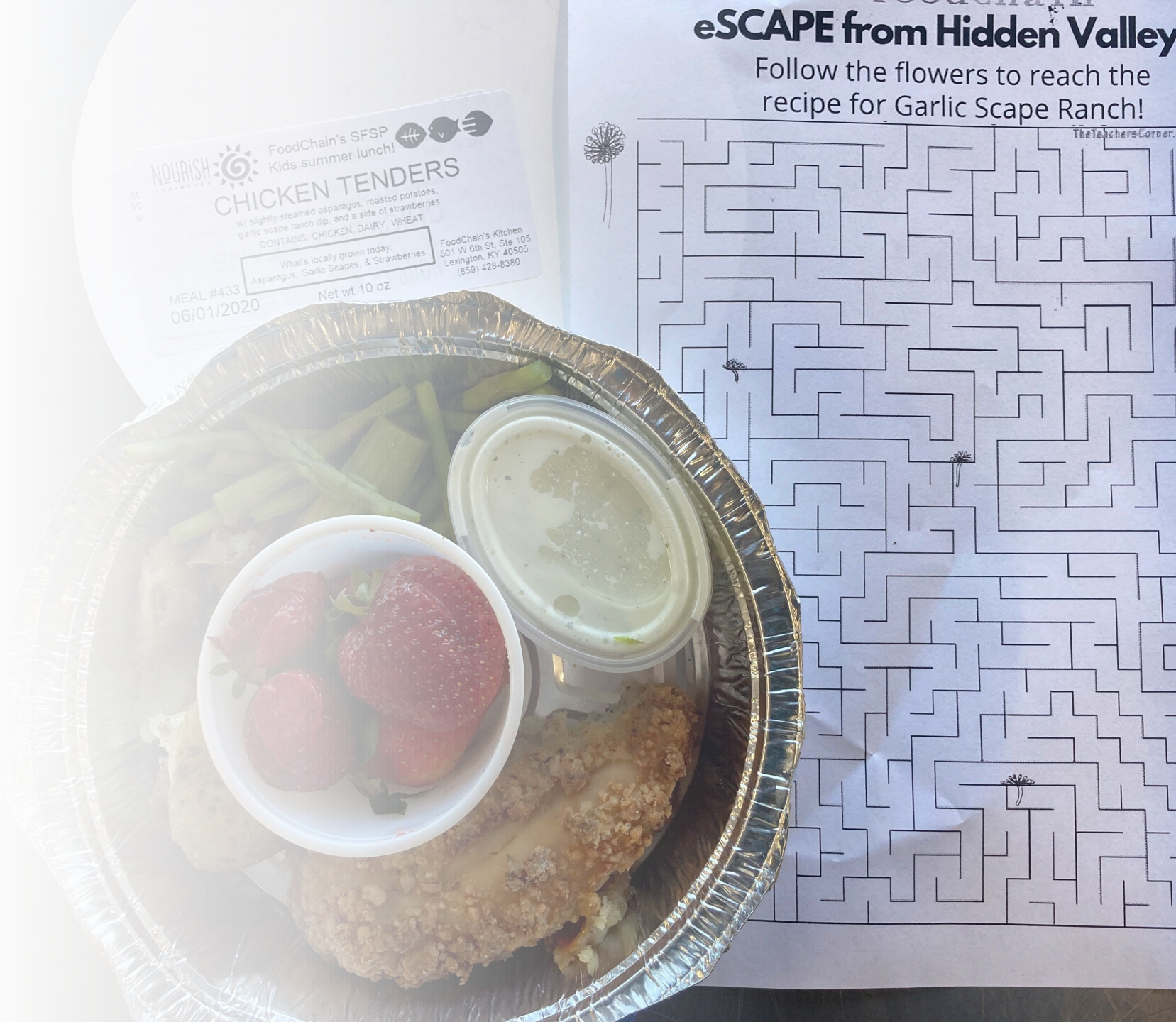
SUPPORTING THE
LOCAL ECONOMY



ABILITY TO MEET
DIETARY
RESTRICTIONS AND
NEEDS



MEALS ARE
EDUCATIONAL



Meal Program Evaluation

COVID-19



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Objectives

(1) evaluate the impact of the COVID-19 pandemic on food access

(2) assess the impact of a community-based free meal distribution program providing emergency support during a pandemic

(3) compare “users” and “non-users”

Methods

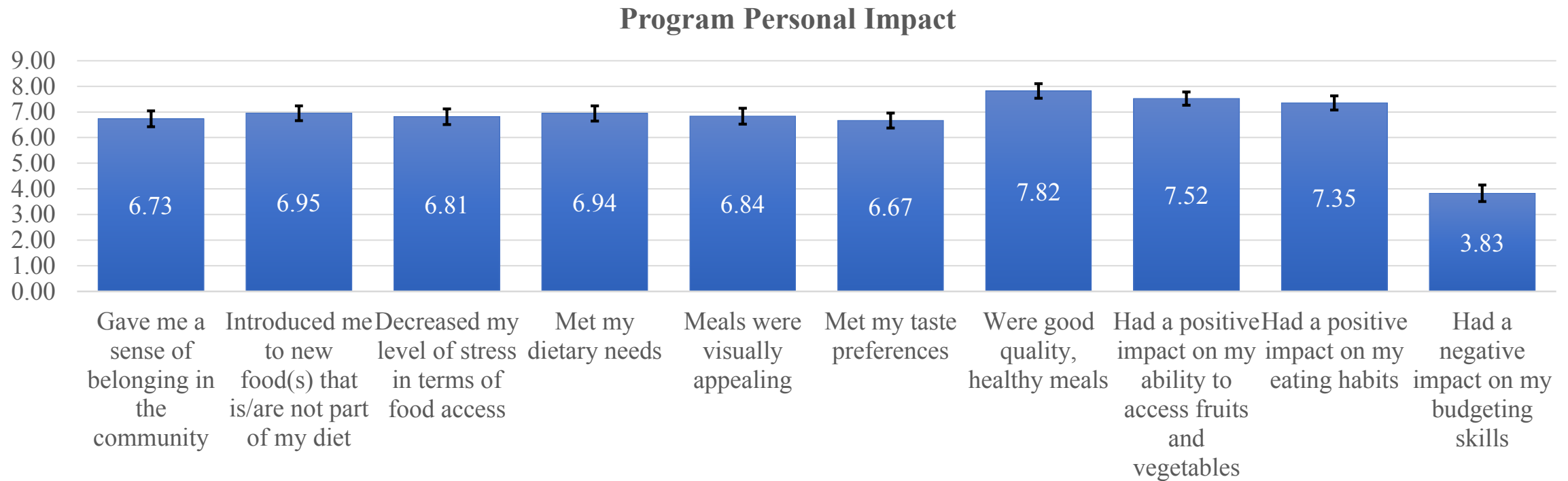
- Data were collected through a cross sectional anonymous Qualtrics survey of those in Kentucky during the COVID-19 pandemic.
- Participants were recruited at the meal distribution site (users) or through Kentucky-based listservs (non-users).
- Inclusion criteria for “users” of the meal assistance program included being over the age of 18 years, able to read and understand the English language, and had received a free meal between the months of September 2020 and February 2021.
- “Non-user” criteria included being over the age of 18, and able to read and understand the English language



Variable		N (Mean/Percent)		p-value
		Users	Non-users	
Sex	Male	26 (28.3%)	5 (2.9%)	<.0001*
	Female	→ 66 (71.7%)	168 (97.1%)	
Age		43.5±15.0 years	20.3±14.8 years	<.0001*
Race	White	34 (37.4%)	151 (87.3%)	<.0001*
	Black	→ 49 (52.7%)	3 (1.7%)	
	Other including bi-racial	9 (9.9%)	19 (11.0%)	
Income	Under \$30,000	→ 48 (52.2%)	34 (20.3%)	<.0001*
	Above \$30,000-Under \$75,000	30 (32.2%)	34 (20.4%)	
	Above \$75,000- Under \$100,000	9 (10.0%)	30 (18.0%)	
	Above \$100,000- \$150,000+	5 (5.6%)	69 (41.3%)	
Food Security Status	Food Secure	5 (5.4%)	103 (58.5%)	<.0001*
	Food Insecure	→ 87 (94.5%)	73 (41.5%)	
Employment	Employed Pre-COVID	64 (70.3%)	110 (62.9%)	.2000
	Employed Since-COVID	50 (56.8%)	107 (60.8%)	
4.5 servings of fruit & vegetables per week		3.4±1.8 days	2.8±1.6 days	.0175*
PSS-10	Pre-COVID	15.3±5.3	17.8±5.3	.0750
	Post-COVID	22.7±6.8	23.4±6.3	

*Data from manuscript in preparation

Likert Item Statements of Personal Impact of the Meal Service Program



Data reported in means and standard error

*Data from manuscript in preparation

Qualitative Themes

In what way has this meal service impacted your life since the pandemic began?

*Data from manuscript in preparation

Parent Themes	Subthemes
Changed habits (n=17)	Healthy eating (n=19)
Mental wellbeing (n=27)	Mental health (n=17)
Provided resources (n=59)	Access (n=27)
	Budget (n=36)
	Family (n=15)
Other (n=2)	Other (n=14)

Qualitative Feedback

QUOTE	MAIN THEMES	SUB-THEMES
"Has been a resource that has made me less apprehensive as far as being able to survive. I can't usually afford fresh food and only use processed food as a last resort."	Mental Wellbeing	Mental Health



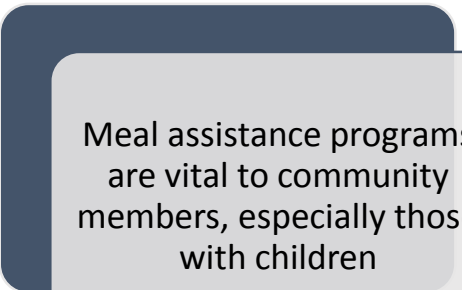
What does this mean?

In response to the COVID-19 pandemic, burden has been placed on individuals to maintain adequate meal intake for themselves and families even with the risk of decreased income.

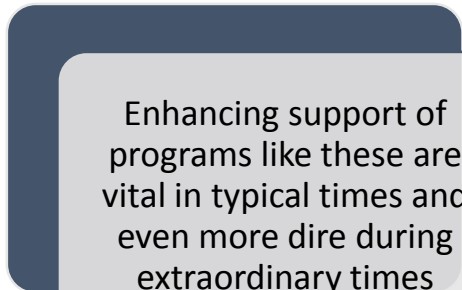
With many communities facing food insecurity prior to the pandemic, much of these populations are experiencing unfortunate consequences of COVID to a heightened extent.



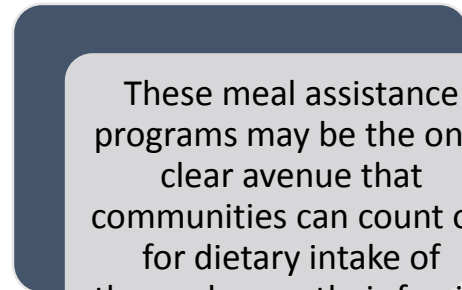
Implications for Practice



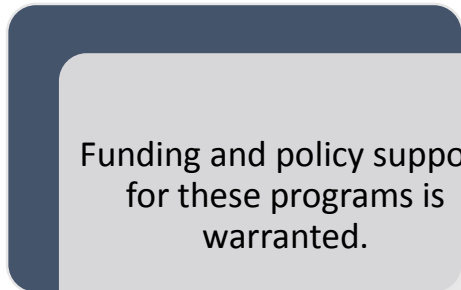
Meal assistance programs are vital to community members, especially those with children



Enhancing support of programs like these are vital in typical times and even more dire during extraordinary times

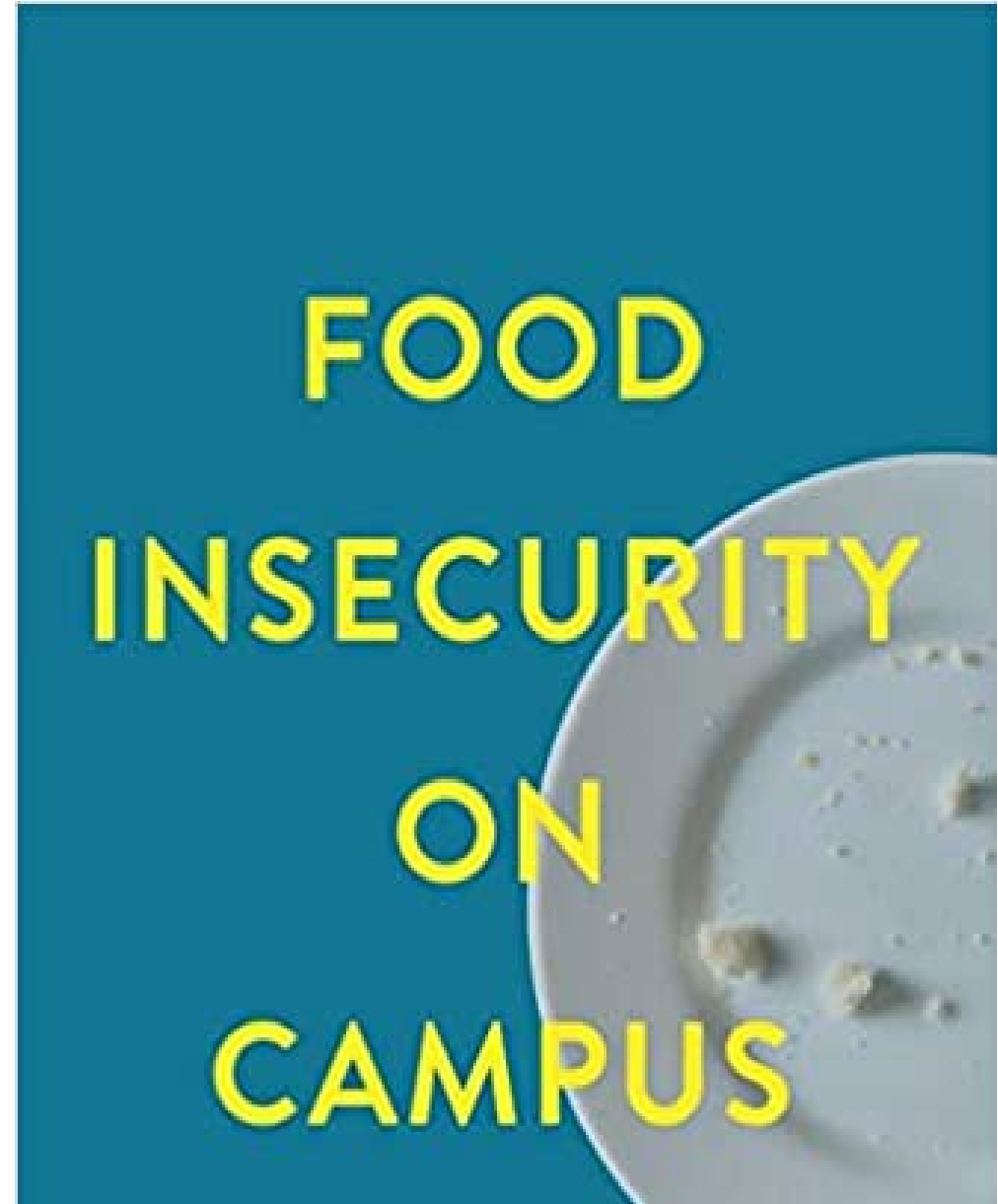


These meal assistance programs may be the only clear avenue that communities can count on for dietary intake of themselves or their family



Funding and policy support for these programs is warranted.

College Student Assessment Before and During the Pandemic



Background

- The U.S. food insecurity rates in college students ranged between 15%-59% before the pandemic [El Zein et al., 2019 and Payne-Sturges et al., 2017).
 - 59.6% are more food insecure since pandemic (Mialki et al. 2021)
- Employment is necessary for some college students to cope with food insecurity (Affordable Colleges, 2021).
 - Knowledge and skills gap including budgeting
- Poor psychosocial health, specifically stress, has also been reported to be prevalent in college students (ACHA, 2019).

Objective

To assess among college and recently graduated students:

- Food insecurity
- Perceived stress
- Employment
- Budgeting habits

Compare before and since the COVID-19 pandemic

Methods

Study design:

Timeline: June 2020- August 2020

Recruitment: Anonymous online surveys

Participants: Convenience sample of current and recently graduated college students

Setting: University of Kentucky (UK)

Incentive: \$10 e-gift card

Data Collected:

Demographics and living situations

2-item food insecurity screening questions

10-item Perceived Stress Scale (PSS-10)

5-item employment questions

2-item budget questions

Statistical Analyses:

Wilcoxon Rank Sum Test

Kruskal-Wallis Test

Pearson Chi-square Test

Multiple Linear Regression

Significance Level: $p \leq 0.05$

Results

THE SURVEY RESPONSE RATE WAS 26.2% (N=235).

31% WERE FOOD INSECURE.

- THIS IS COMPARABLE TO THE RATE OF 34.5% FROM ANOTHER COLLEGE FOOD INSECURITY COVID-19 STUDY (OWENS ET AL., 2020).

Variable		Food Secure	Food Insecure	p-value
Sex	Male	31 (23.5%)	12 (19.7%)	.5540
	Female	101 (76.5%)	49 (80.3%)	
Age		21.7±3.3	21.8±2.9	.8970
Race/Ethnicity	White	101 (76.5%)	42 (68.9%)	.2586
	Non-White	31 (23.5%)	19 (31.1%)	
Year in school	Undergraduate	82 (62.1%)	38 (62.3%)	.9999
	Graduate school	24 (18.2%)	11 (18.0%)	
	Recent graduate	26 (19.7%)	12 (19.7%)	
PSS-10	pre-COVID	15.9±5.8	18.2±4.4	.0099*
	since-COVID	20.8±6.5	22.8±5.9	.0891
Living situation pre-COVID	University housing	49 (37.1%)	19 (31.1%)	.4193
	Off-campus	83 (62.9%)	42 (68.9%)	

Food insecure individuals were **2.59 times more likely** to budget than food secure participants before the pandemic. (not significant since-COVID)

Looking at PSS-10 scores for on- and off-campus living situations, there was an association between living situation and PSS-10 scores (on campus: 14.59±4.93 and off campus: 12.71±5.47; p<0.01)

*Data from manuscript in preparation

Employment

- **37.8%** of participants were laid off or temporarily furloughed.
- Despite the pandemic, those who worked pre-COVID have a **3.49 higher likelihood** of continuing to work



*Data from manuscript in preparation

Results

- No significance between PSS-10 scores and employment status for both pre- ($p=0.52$) and since-COVID ($p=0.36$)
- Mean change of PSS-10 scores from pre-COVID to since-COVID increased almost 5 points on the PSS-10 scale
 - COVID-19 has elevated the stress of both groups, with food insecurity group remaining higher, although not significant.
- **Predictors** of since-COVID PSS-10 after controlling for demographics (Linear Regression):
 - Pre-COVID PSS-10 ($p<0.01$)
 - Age ($p=0.03$)
 - Lower division student ($p=0.02$)

Implications for Practice

- Critical to leverage existing resources and incorporate sustainability into solutions on a local and national level
- Potential for innovative, multidisciplinary approaches to address college food insecurity during the pandemic



During the COVID-19 pandemic, the Campus Kitchen's Farm to Fork program led by students utilizes recovered food to prepare and distribute nutritionally balanced meals (left) in eco-friendly containers attached with nutrition education flyers to UK students for free (right).

Solutions for Universities

- During the Covid-19 shutdown, universities closed, causing many students to return home
- Dining halls and food pantries remained open to serve students that stayed on-campus
 - Proper safety measures were put in place due to the pandemic
- Legislation regarding resources for struggling college students is still under review
 - Many do not qualify for SNAP or Temporary Assistance for Needy Families (TEFAP)
- Universities need to come together to provide best practices/proper resources to food insecure students

Solutions for Universities (continued)

- Students are assets to the university and the future
- Universities have the resources available to create a unique system to accommodate their students in need
 - Researchers, educators, student leaders, etc., begin a dialogue:
 - Apply for grant funding
 - Network
 - Global efforts/ join global initiatives
- A cross-sectional study from a land grant university included in their study how students, faculty, and staff used food pantry resources to prepare pre-packaged bags of food for students to order online (Mialki et al. 2021)
- Providing such resources empowers students to be part of these systemic changes



END CHILD HUNGER IN ALABAMA (ECHA)



Hunger Solutions Institute (HSI)



PRESIDENTS UNITED TO SOLVE HUNGER (PUSH)

Hunger Solutions Institute (HSI)

- Initiatives by HSI have created infrastructures for specific settings
- Shares knowledge and best practices about combating hunger and food insecurity

Universities Fighting World Hunger (UFWH)

- Infrastructure provided by the Hunger Solution Institute (HSI)
- Partners with the United Nation's (UN) World Food Programme (WFP)
- Founded in 2006 at Auburn University and expanded to about 300 college campuses
 - "War on Hunger" was the initiative of UFWH
- Annual summits hosted at universities
 - Students empowered to be leaders and learn potential solutions and showcase their hunger work
 - Communicate knowledge to institutions all over the world
 - International chapters include:
 - Fiji
 - Thailand
 - Iceland



Presidents United to Solve Hunger (PUSH)

- Consortium of universities from around the world that have the collective mission to end hunger and poverty, locally and globally
- University presidents/chancellors sign the Presidents' Commitment to Food and Nutrition Security
 - Over 100 university presidents from 5 continents
 - UFWH is their student counter-part
- Ending hunger is a core value of higher education institutions worldwide

PUSH

- 112 Signatories
- 29 Engaged Countries
 - Canada
 - Latin America
 - Morocco
 - South Africa
 - Liberia
 - Lebanon
 - Qatar
 - Bali
 - Malaysia

- 20 Partnering Organizations
 - Food and Agriculture Organization of the United Nations
 - Campus Kitchens Project
 - Association of Public & Land-Grant Universities
 - Hunger U
 - Rise Against Hunger

UNICEF and WFP

- Working with governments to strengthen and expand social protection programs to address poverty, food insecurity and malnutrition amongst children
- Covid-19 has disrupted school feeding and related programs
 - Many US and Canadian students receive free meals at school
 - Children in other countries often rely on school meals to be their only meal each day
 - Governments providing take-home rations, vouchers, and cash transfers to children in 60+ countries during Covid shutdowns
 - As schools re-open now and in the future, health and nutrition services are provided as incentives to get children back in school in 30 low income/fragile countries (10 million children)

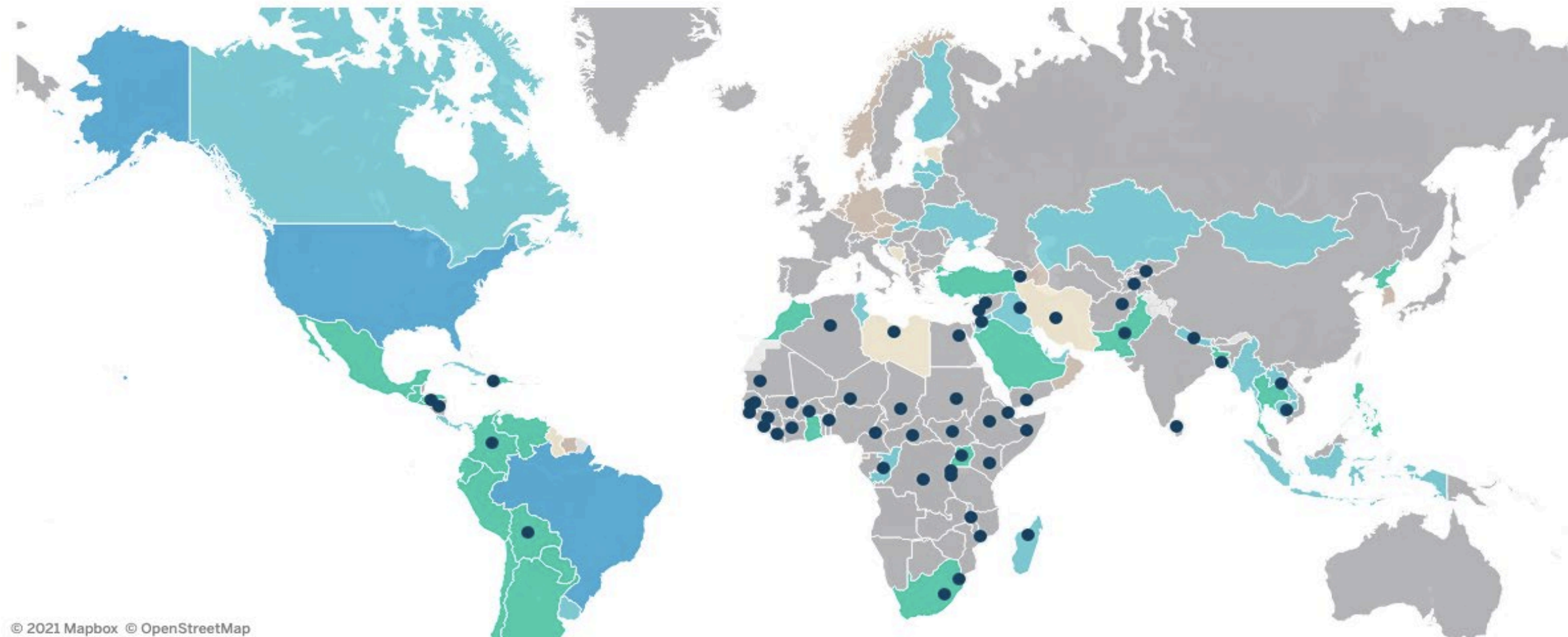
- Current situation
- April 2020 (school closure peak)

154M

Children missing out on meals at school globally (47% are girls)

79

Countries with school closures



© 2021 Mapbox © OpenStreetMap

Color Code first map

- | | |
|--------------|-----------------------|
| 1 - 100,000 | No data |
| 1M - 10M | Over 10M |
| 100,000 - 1M | Schools Open / Acad.. |

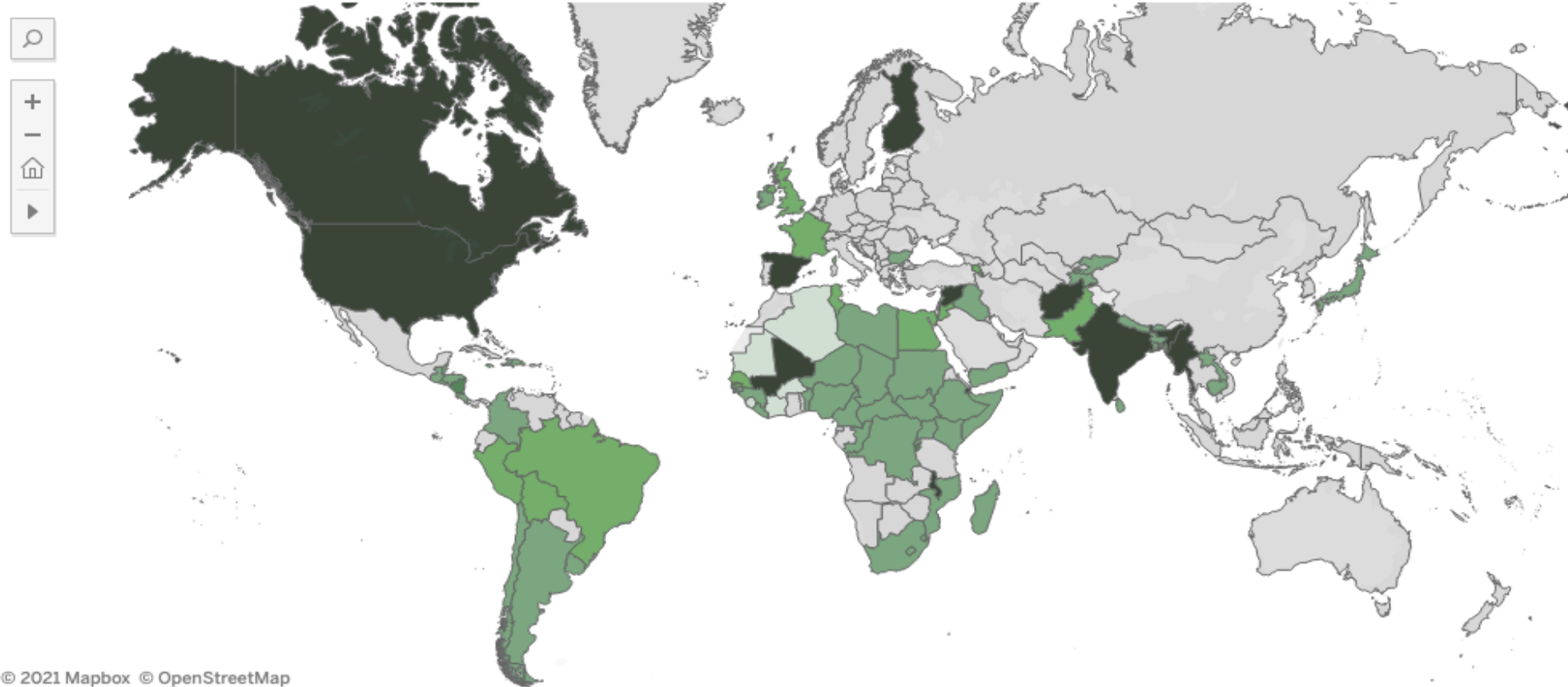
WFP Supported Operations



3M children affected in 15 countries

- ☒ All solutions
- ☐ Only WFP solutions
- ☐ Only Government solutions

Select a country on the map to learn more about Governments and WFP response to the crisis



No data available

126
Countries

Programme on hold

5
Countries

Schools Open

2
Countries

Cash-Based Transfers to
schoolchildren's families

13
Countries

Various modalities

14
Countries

Take-Home Rations to
schoolchildren

52
Countries

THE POWER OF PARTNERSHIP

No one person, nation, organization, or university can solve the critical issues of hunger and malnutrition. But working together, we can. The Hunger Solutions Institute and Universities Fighting World Hunger are proud to be part of a growing, multi-sector global network dedicated to ending hunger and malnutrition.



Call to Action

Collaborate!

- Conduct needs assessment
- Find existing resources
- Network
- Partner

Evaluation of programming

- Opportunities for funding
- Lobbying to policy makers

Empower community

- Give a voice

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Thank you!
Any questions?

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