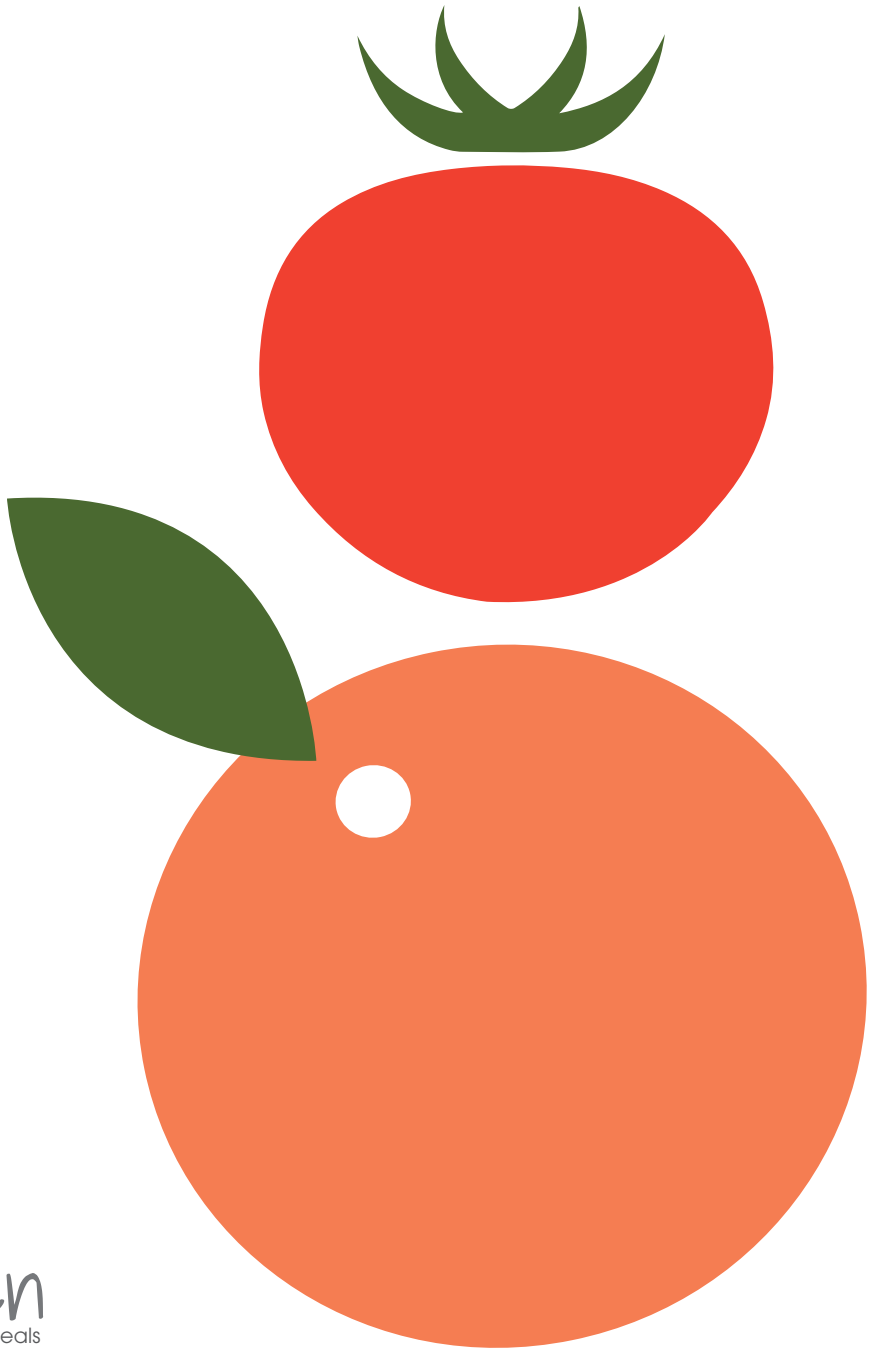
ORGANIC, PLANT-FORWARD, SCRATCH COOKED SCHOOL MEALS

A CALIFORNIA CASE STUDY



Friends of the Earth

conscious kitchen
fresh local organic seasonal nutritious school meals

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About Friends of the Earth

Friends of the Earth U.S., founded by David Brower in 1969, is the U.S. voice of the world's largest federation of grassroots environmental groups, with a presence in 74 countries. Friends of the Earth works to defend the environment and champion a more healthy and just world. Friends of the Earth's climate-friendly food program helps school districts make the shift towards healthy, delicious, plant-forward menus. We provide technical assistance and marketing materials, support student and community engagement strategies, and link school districts with the resources they need to be successful. We also advocate for state and federal policy change in support of healthy, climate-friendly food.

About Conscious Kitchen

Conscious Kitchen is a scalable and economically-feasible model designed to feed our children healthy, delicious meals that will reduce preventable disease and build community at schools and beyond with kitchens as key hubs, while helping to accelerate the conversion of farmland toward producing a diversified, regenerative, climate friendly, organic supply chain.

Any errors or omissions in this brief are the responsibility of Friends of the Earth U.S. and Conscious Kitchen.

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EXECUTIVE SUMMARY

A. Introduction

Too often, school meals are made with pre-packaged, highly processed food that is unhealthy for kids, unsustainable for our environment, and produced using an exploited workforce. Fortunately, innovative school food programs are proliferating across the country, demonstrating viable pathways for positive change. As this report reveals, transforming school food service can generate multiple benefits, from improving students' nutrition, to supporting local organic farmers, to making school food service a source of dignified, well-paid jobs in communities. It can also produce numerous health and environmental benefits that ripple out far beyond the school community.

This report spotlights one alternative, values-based, climate-friendly school food service model developed by the California-based non-profit organization Conscious Kitchen. This model is rooted in providing 100 percent organic, scratch-cooked, and plant-forward meals from low-waste kitchens. We examine three California schools in the San Francisco Bay Area that are currently implementing the Conscious Kitchen model:

- The Sausalito Marin City School District has been operating federally supported meal programs based on the Conscious Kitchen model for 7 years at its two elementary schools, Willow Creek Academy and Bayside MLK Academy.
- Peres Elementary School in West Contra Costa Unified School District (WCCSD) completed a successful 2018-19 school year pilot program.

All three schools are racially diverse, and 100 percent of students at Bayside MLK and Peres qualify for free and reduced meals. Peres is the largest of the schools, serving 536 students, while the Sausalito Marin-City schools serve 505 students combined. Conscious Kitchen provides staffing, resources, and expertise to facilitate schools' transition. It serves as a one-stop-shop for technical and leadership support, funding, and logistical coordination.

Conscious Kitchen's long-term goal is for schools to pilot the program, adopt its practices, and eventually fully operate their own on-site and self-sustaining kitchens based on the model.

This report details five strategies, or investments, for school food transformation:

- **Serving fresh and scratch-cooked meals through investment in workforce and kitchen infrastructure**
- **Expanding organic and regional sourcing through diverse supply chains**
- **Designing plant-forward menus for healthy, cost-effective and climate-friendly meals**
- **Reducing food and packaging waste**
- **Educating and engaging students and the school community**

CLIMATE-FRIENDLY FOOD SERVICE

Achieves a lower carbon and water footprint by regularly offering healthy, plant-forward, and plant-based menu options. It also cuts emissions by sourcing food from organic and regenerative farms, reducing food and packaging waste, and implementing energy and water saving measures in the cafeteria.

"Considering that many of our students qualify for free or reduced lunch, having a healthy, organic breakfast and lunch available to ALL kids is a powerful way to address equity issues in our community."

— Emily Cox, Principal, Willow Creek Acadmey

It also highlights key lessons learned and details the public health, ecological, economic, and social justice benefits that accompany these strategies. While Conscious Kitchen is unique in its comprehensive approach to values-based, climate-friendly school food service, there are many examples of school districts across the nation that are adopting various strategies outlined in this report. The State of California's 2020-21 budget allocation of $10 million for the Department of Food and Agriculture's (CDFA) Farm to School Program is an exciting new opportunity that will allow more school districts in California to pursue school food service transformation strategies.

We hope that this case study will inspire leaders at other schools — superintendents, food service directors, principals, teachers, and other stakeholders — to discover which strategies and investments work for them. We also hope that the compelling benefits of this model will inspire greater public and philanthropic advocacy and investment to support a comprehensive transition to healthier, more sustainable school food service.

B. The Imperative For Values-Based School Food Service

By recognizing the hidden health, social justice and environmental costs of the dominant industrial school food paradigm, this case study envisions how to shift resources toward a values-based paradigm that incorporates social, health, and environmental values. Instead of spending the $14 billion of taxpayer dollars used in the National School Lunch Program to exacerbate an unhealthy and unjust system, we must begin to invest in school food programs that center human and planetary health. Since the 2010 Healthy, Hunger Free Kids Act strengthened nutrition guidelines, school food has improved. Kids eat more fresh fruits and vegetables, and school garden, nutrition programs, and farm-to-school programs are more widespread. Yet, highly processed food still dominates school menus, and efforts to improve school meals are hindered by lack of kitchen infrastructure and scratch-cooking capacity and complex regulations, low reimbursement rates, and industry influence over policy.

This case study offers key lessons for how school districts were able to overcome these challenges with significant technical and financial support from an outside group, Conscious Kitchen.

While the coronavirus pandemic's economic effects will make investing in healthier school food more difficult, it also highlights the importance of investing in healthy food for schools. Diet-related diseases, which are most prevalent in BIPOC communities (Black, Indigenous, people of color), are among the strongest predictors of whether an individual infected with the virus will require hospitalization or even die.[1] These health disparities emerge early in life. For example, Hispanic and Black youth have significantly higher rates of obesity than white children.[2] The majority of students eating meals at school are low-income and disproportionately students of color.[3] Because these students disproportionately rely on school meals as a primary source of nutrition, improving school meal quality is a compelling point of intervention to mitigate racial health disparities from an early age.

C. Key Strategies And Benefits Of School Food Service Transformation

1. Investing in scratch cooked meals is an investment in higher quality jobs, gender and racial equity, and tastier food that increases equitable participation in school meals.

Making fresh, delicious scratch-cooked food requires upgrading kitchen infrastructure, training kitchen staff, and hiring skilled cooks who use quality ingredients and recipes. Many school kitchens are in a state of disrepair due to underinvestment over the last forty years as districts have shifted to centralized, pre-packaged and outsourced food production.

Conscious Kitchen helped the three schools in this case study invest in food service jobs as well as in kitchen equipment and upgrades. Equipment upgrades in the Sausalito Marin City School District cost approximately $30,000 per kitchen. Once these investments were made, scratch-cooked food became the most cost-effective way to create meals.

BENEFITS: Scratch cooking requires more labor, which means investing in full-time school food jobs that generate higher incomes, more work hours, health care, and benefits. Scratch meal preparation also results in increased training opportunities that build transferable skills. Across all three schools, eight full time equivalent jobs were created, in contrast with typical school meal programs that employ primarily part-time staff. Investing in the school food service workforce advances justice and equity since most school lunch workers are women and women of color. Surveys found that kids also prefer fresh, organic scratch-cooked meals. When kids like school meals, full-paying students are more likely to participate. At Willow Creek Academy, the higher quality food increased participation rates from paid students. This created a more equitable school food service environment that helped reduce the stigma around school lunch while also increasing revenue for the school meal program.

2. Sourcing organic food reduces exposure to toxic pesticides, benefits the environment, and when sourced from regional distributors, can create jobs in the regional food economy.

The schools profiled in this report serve one hundred percent organic meals. While it is widely assumed that organic food is too expensive for school food service, this analysis shows that organic purchasing is not only possible, but that the price can be on par with or lower than conventional school meals, that are typically provided by broadline distributors which do not offer a wide variety or the most competitively priced organic products. By developing strong relationships with values-driven regional distributors and companies—including Earls Organic Produce—the schools profiled here were able to secure consistent organic supply with good prices. The organic food costs for Peres Elementary's breakfast and lunch combined were $0.11 less than the reported National School Lunch Program daily average food costs.

BENEFITS: There are many health, community, and environmental benefits associated with serving more organic food in schools. Organic food reduces children's exposure pesticides, and rural communities' from pesticide exposure.[4] Organic farming also eliminates farmers, farmworkers, and rural communities' from pesticide exposure.[4] Organic farming also eliminates routine use of antibiotics and other drugs in animal agriculture, provides food with improved nutritional profiles, and protects biodiversity and the climate.[5] What's more, organic farming systems are more profitable for farmers, can create more jobs than conventional farming systems, and can help address rural poverty.[6]

3. Investing in plant-forward menus with "less and better" meat is a win-win-win for health, environment, and cost-savings

The schools profiled in this report increased the number of plant-forward options on their menus. The schools found that scratch cooked plant-forward and plant-based meals were often less expensive than meat-based dishes, creating budget flexibility to purchase organic ingredients and more sustainably raised meat. Willow Creek discovered it could save $9,450 per year by swapping out some beef-based meals for plant-forward and plant-based options. This analysis is confirmed by an Oakland Unified case study that found that by shifting to plant-forward meals, the district saved over $42,000 during the assessment year, and student participation increased.[7]

BENEFITS: There is broad expert consensus that eating more plants and less meat is better for our health and the environment.[8] Animal products are resource-intensive foods, requiring massive water and energy inputs. They also generate significant greenhouse gas emissions, soil, air, and water pollution. To avert the worst impacts of climate change, we must produce and eat "less and better" animal products. This means consuming fewer animal products and supporting the farmers who are raising animals sustainably.

4. Reducing food and packaging waste saves water and reduces pollution.

Conscious Kitchen worked with maintenance, operations, and food service teams to employ cost-effective strategies to reduce packaging and food waste through prevention, recycling, and composting. To prevent waste associated with typical heat-and-serve meals, schools served meals out of metal hotel pans with reusable utensils. Kitchen teams prevented food waste by implementing monthly meal planning, weekly food buying, and standardized storage and labeling practices that allowed them to adjust and cook recipes according to demand and integrate leftovers into new meals.

BENEFITS: Preventing food waste saves water and reduces greenhouse gas emissions by reducing the water and energy resources required to produce, process, and transport food and packaging, and cutting the significant methane emissions associated with landfill-bound food waste.

5. Student and community education and engagement improves participation and ensures that program meets the diverse needs of the school community.

School dining facilities should be considered as much a place of learning as the classroom, art room, and recreation field. Toward this vision, Conscious Kitchen staff developed the Student Ambassadors Program, created resources for implementing a "hospitality mindset" in the dining hall, and at Bayside MLK, provided funding support for a school garden and nutrition teacher. This engagement improved student nutrition education and increased participation in school meals, a main driver behind school food service profitability.

BENEFITS: When students participate in initiatives like the Student Ambassador Program, school meals are more likely to represent the diverse cultures and values of the community that they serve. When students are eating delicious food, are educated about just and sustainable food systems, and are more involved with food through cooking and gardening, they are more likely to participate in school lunch and become future advocates for a healthy and sustainable food system.

D. The Costs of Transforming School Meal Programs

The three schools profiled in this report, like others in California, were operating within constrained budgets. Each school's partnership with Conscious Kitchen was crucial to fundraising and building the capacity, leadership, and innovation needed to make new investments. In some cases, Conscious Kitchen provided direct financial support.

Strategies to cover additional costs

- Modest general fund support can produce big returns. The Sausalito Marin City School District allocated $126,800, or 1.6 percent of the district's general funds to support the transformation of the school meal programs at Bayside MLK and Willow Creek Academy.
- Leveraging philanthropy to fill the gap and spur innovation. The pilot program at Peres was funded through federal and state reimbursement based on student participation rates and private philanthropy to cover the shortfall. The breakfast meal based on the Conscious Kitchen model cost $0.76 more per student and the lunch meal cost $1.33 more per student than what the district received in reimbursement, primarily to cover the cost of additional labor for scratch cooking and other program support costs. In total, this amounted to a $142,432 additional annual cost for school meals, or $265 per student, that wasn't covered by reimbursement.

E. Recommendations

Many food service directors and their staff share a vision of healthier, more just, and sustainable food service.They want to upgrade their kitchen operations and improve their menus, recipes, and sourcing to provide fresh food and scratch cooked meals to students. But vision and commitment only go so far. Making it possible to serve scratch cooked and/or speed scratch school meals across our state using more organically sourced food will require policymakers and philanthropists at the local, state and federal level to step up and dedicate meaningful resources to the effort.

Key recommendations for State policy makers include:

- Provide consistent annual funding to CDFA Farm to School Program and ensure that the program prioritizes sourcing from climate-smart and organic agricultural producers.
- Allocate at least $70 million for school food personnel training and healthier school meals—the amount proposed by Governor Newsom in his pre-COVID January 2020-21 budget proposal.
- Allocate more funding from CDFA's $22 million Specialty Crop Block grant program to projects that will directly benefit school meal programs and producers.
- Advocate for the Department of Defense Fresh and the Fresh Fruit and Vegetable Program operating in the state to prioritize purchases from organic and climate-smart agricultural producers.
- Advance values-driven procurement and healthy school food via legislation similar to prior bills supporting organic (AB 958); plant-based foods (AB 479), and school nutrition standards (AB 2949).[10]
- Advocate for policy changes at the federal level, including universal free meals for all children, more funding for kitchen equipment and facilities, scratch cooking training, Farm to School programs, and stronger nutritional standards in the upcoming Child Nutrition Reauthorization Act.
- Advocate for funding increases in 2023 Farm Bill programs that support healthy food and regional food systems, including the Fresh Fruit and Vegetable Snack Program, the DOD Fresh Program, Section 32 fruit, nut and vegetable purchases for nutrition programs, Local Agriculture and Marketing Promotion Program, the Specialty Crop Block Grant Program, among others.[11]

Building the political will to support policy change and school food service transformation will take a broad dedicated movement working collectively across many sectors. Philanthropists, school boards, and school food service staff must join with students, NGOs, and parents to advocate for policy shifts at the state and federal level. In addition, philanthropists across sectors can fill a critical resource gap and use private funds to help school districts make changes in procurement, staffing, and culinary infrastructure that can demonstrate the value of policy change at the state and federal levels. They can also expand funding for NGOs to assist with technical assistance, advocacy, and community engagement to facilitate healthy and sustainable school food services. More recommendations for school boards and school districts can be found in Section V.

I. Introduction

Since the outbreak of COVID-19, courageous school food workers — underpaid and mostly women — have been on the frontlines feeding millions of food insecure children across the country. As food insecurity has skyrocketed during the pandemic, the vital but often overlooked role of schools in feeding vulnerable communities has become even more important. Every year, public schools across the nation serve 4.9 billion lunches to 29.6 million students. In California, schools provide 536 million lunches worth more than $1.5 billion dollars to 3.17 million students participating in the National School Lunch Program, 84 percent of which are free-and-reduced cost meals.[12]

Yet too often, school meals are made with pre-packaged, highly processed food that is unhealthy for kids, unsustainable for our environment, and produced by an exploited workforce.[13] The pandemic has revealed more starkly what we already knew — diet-related diseases increase overall health risks and are more prevalent among low-income children, especially communities of color — making school food service a vital opportunity for critically needed interventions to transform our food system toward greater health and justice.[14]

During the pandemic, the U.S. Department of Agriculture (USDA) has allowed school districts to provide universal free meals to all students without having to document their economic need.[15] This sets an important precedent that could improve the quality and equity of school food service in the future. If universal free meals can be extended beyond the pandemic, it could potentially create more budget for school districts to spend on nutritious, healthy food by reducing a major administrative burden on schools.

Fortunately, innovative programs are proliferating across the country, demonstrating viable pathways for improving school meals while providing good jobs and improving the environmental footprint of school food service.

These initiatives are succeeding despite low federal reimbursement rates for school food programs, challenging bureaucratic constraints, and the existing industrial food paradigm — which often makes pre-packaged, unhealthy food the only option for under-resourced school districts.

As this report reveals, transforming school food can result in multiple benefits, from improving students' nutrition to making school food service a source of dignified, well-paid jobs in communities. It can also produce numerous health and environmental benefits that ripple out far beyond the school community.

This report spotlights one alternative school food model developed by the non-profit organization Conscious Kitchen (CK). This model is rooted in providing 100 percent organic, scratch-cooked and plant-forward, climate-friendly meals. Conscious Kitchen has provided resources, expertise, and staffing support to enable three California schools in the San Francisco Bay Area to transition their food service programs. Two public schools in the Sausalito Marin City School District have been operating federally supported meal programs based on the Conscious Kitchen model for 7 years, while Peres Elementary School in West Contra Costa Unified School District (WCCUSD) completed a successful 2018-19 school year pilot program.

> "Conscious Kitchen is showing that we can do this on a larger scale. If we can do it here, at a school where 100 percent of students eat free or reduced-price meals, then we can replicate it elsewhere."
>
> — Jawan Eldridge, Principal, Peres School

This report details five strategies that Conscious Kitchen used to help participating schools implement the model, including key lessons learned and the broader context about the health, ecological, economic, and social justice benefits that accompany these strategies:

- Serving fresh and scratch-cooked meals through investment in workforce and kitchen infrastructure
- Expanding organic and regional sourcing through diverse supply chains
- Designing plant-forward menus for healthy, cost-effective, and climate-friendly meals
- Reducing food and packaging waste
- Educating and engaging students and the school community

By documenting these strategies and benefits, we aim to inspire and equip food service directors and school staff with ideas and tools for integrating elements of this model in their school meal programs. We also hope that the compelling benefits of this model will inspire greater public and philanthropic advocacy and investment to support a comprehensive transition to healthier, more sustainable school food service.

Since the 2010 Healthy, Hunger-Free Kids Act strengthened nutrition guidelines, school food has improved, including a significant increase in fresh fruits and vegetables, school garden and nutrition programs, and growing participation in farm-to-school programs. Yet, efforts to improve school meals are still hindered by the lack of kitchen infrastructure and scratch-cooking capacity and complex regulations, low reimbursement rates, and industry influence over policy.

Today's severe economic and public health crises make it even more difficult for schools to find the resources they need to transform their food service programs. But in California, a new resource is emerging to support these efforts: the state Department of Food and Agriculture's Farm to School program. This $10 million initiative, approved in Governor Newsom's 2020-21 budget, boosts funding and technical support for a new school food paradigm centering around the importance of education, local and regional sourcing, and climate-friendly production practices.

This state grant program will create new opportunities for school districts to implement some of the strategies outlined in this report.

While the economic effects of the COVID-19 pandemic will make investing in healthier school food service more difficult, it is also highlighting the critical importance of making those investments. Diet-related diseases, which are most prevalent in communities of color, are among the strongest predictors of whether an individual infected with the virus will require hospitalization or even die.[16] These health disparities emerge early in life. For example, Hispanic and Black youth have significantly higher rates of obesity than white children.[17] School meals are a direct point of intervention to address racial health disparities among children of color.

School food service is also a critical intervention to combat food insecurity. For many counties, school food represents the largest community feeding operation. Schools can also serve as a hub for emergency food relief, as we are currently seeing in the pandemic. By thoughtfully building out local food distribution capacity, schools will be poised to serve communities on a broader basis during future crises and to play a key role in vibrant regional food supply chains providing community food security and economic stability.

Greater investment in healthy and sustainable school meals can be a win for kids' health, for improving food security and health equity, for building robust and resilient regional food systems, and for the health of our planet.

II. THE SOCIAL JUSTICE, PUBLIC HEALTH, AND ENVIRONMENTAL IMPERATIVES FOR TRANSFORMING SCHOOL FOOD SERVICE

The dominant food system through which school meals are typically sourced is often referred to as "industrial." In other words, it is guided by norms of economic efficiency and standardization above other values. The result is "cheap" meals that in reality come with a host of hidden costs to the environment, public health, and social justice. In addition, the prevailing industrial food system is dominated by corporate actors, from food manufacturers and distributors to agrichemical companies. These corporations have enormous power to "set the rules of the game" in ways that enrich themselves at the expense of the public, farmers, farmworkers and foodservice workers, and low-income communities. It could easily be argued that one of the main beneficiaries of a typical school meal program are corporate agribusinesses. When we center values of social justice, public health, and environmental sustainability, it becomes clear that there are myriad pressing reasons to transform school food service.

Making school meals healthier and available to all is a social justice imperative

Lack of access to healthy, nutritious food for all children is one of America's most pressing challenges. Today's generation of children is the first expected to live shorter lives than their parents, due in part to the food they eat.[18,19] Poor nutrition and diet-related chronic illness in children are on the rise, and rates are much higher among children of color, leading to long term health and educational disparities. The majority of students who eat school provided meals are low-income and disproportionately students of color who are already at higher risk for diet-related diseases.[20]

In California, 18 percent of Black and Latinx adolescents in grades 9-12 suffer obesity, a rate three times higher than their white classmates. Younger Black, Brown and Indigenous children in grades 5-9 are also overweight or obese at much higher rates (41%, 44% and 47% respectively) than their white counterparts (28%).[22] Children who experience obesity are more likely to have diabetes, asthma, joint issues and digestive problems, as well as high blood pressure and high cholesterol which are both risk factors for cardiovascular disease. They are more likely to become adults with obesity, leading to increased risk of several serious health conditions including heart disease, type 2 diabetes and cancer.[23]

School meals must be aligned with healthy eating guidelines

Most school lunches are packed with highly processed foods optimized for convenience, long shelf-lives, and low price at the cost of children's health, education outcomes, and life expectancy. Highly processed foods contain common additives and chemicals associated with compromised immune and hormonal systems and heightened risk of cardiovascular disease, cancer, and ADHD.[24] Eating processed foods is associated with weight gain, reduced intake of important nutrients (magnesium, calcium, vitamins A, C, D, etc.), and greater consumption of refined carbohydrates, added sugars and saturated fat.[25]

Many children's diets lack nutritionally dense foods. According to the Centers for Disease Control, just 1 in 10 U.S. children eat enough vegetables.[26] In California, 70 percent of adolescents fall short on fruit and vegetable consumption.[27] A forthcoming Friends of the Earth menu analysis of California's 25 largest school districts found that meals featuring red meat, known to increase the risk of chronic disease and obesity, make up 4 of the top 10 entree items offered in a given month.[28] Cheese dishes, high in saturated fat, make up 30 percent of all dishes offered, and an alarming 16 percent of meals contained processed meats (e.g. hot dogs, deli meats), which are known to increase cancer risks.[29] Only 4 percent of the entrees were plant-based.[30] School lunch menus must be brought into better alignment with healthy eating practices, defined by the 2015-2020 Dietary Guidelines as diets that are

high in minimally-processed foods that help achieve a healthy body weight and reduce the risk of chronic disease. These include a large variety of fruits, vegetables, whole grains and protein-rich foods, including seafood, lean meat and poultry, legumes, nuts, seeds and soy foods.[31]

Beyond nutrition: School meals must protect public health and support safe, dignified jobs

The dominant industrial food system produces and exacerbates poverty, hunger, and public health crises. Millions of people who harvest our food, work in slaughterhouses, and make our meals earn the lowest wages, live in or near poverty, and face serious health issues due to our food system's plethora of highly processed, unhealthy foods. Rural farming communities are hurting economically from

UNJUST WORKING CONDITIONS FOR SCHOOL FOOD SERVICE WORKERS

- School food service workers are among the lowest paid public sector employees. The average K-12 earned a median income of just $26,900 in 2018.[33]
- Over one-third of school food service and cafeteria workers participate in at least one public assistance program designed to address food insecurity or child and family poverty.[34]
- Significant racial and gender inequity is also a problem: Over 90 percent of school food service workers are women, and many are women of color.[35]
- Across the entire food supply chain, women of color face both a racial and gender penalty: Black women earn 42 cents, Latina women 45 cents, Asian women 58 cents, and Native women 36 cents for every dollar earned by white men.[36]

Farmworkers and rural communities are on the frontlines of exposure to toxic pesticides linked to cancer, infertility, neurological harm, and other serious health concerns. On a typical conventional diet, today's youth are exposed to a host of toxic synthetic pesticides. More than 90 percent of Americans have detectable pesticides in their bodies as a result of dietary exposures.[37] Children with high urinary concentrations of certain pesticides are more likely to be diagnosed with attention-deficit/hyperactivity disorder.[38] Exposure to pesticides in utero or early in life can increase the risk of autism, birth defects, and asthma and lead to cancers in childhood or later in life.[39] In addition, more than 50 pesticides are associated with endocrine disruption. Research shows that extremely low levels of exposure to endocrine disruptors can result in increased risk of cancers, learning disabilities, brain development problems, thyroid and immune disorders, obesity, diabetes and reproductive disorders.[40]

While most of the research on the health impacts of pesticides has focused on people who are highly exposed — like farmers and farmworkers or agricultural communities impacted by pesticide drift — a growing body of data on the health benefits of organic diets is indicating that dietary exposure to pesticides may also cause harm to eaters. These studies show that eating organic food — which is grown without toxic pesticides— can reduce eaters' risk for a large range of health problems from cancer to infertility to diabetes.[41]

"Children's exposure to pesticides should be limited as much as possible."[42]

— American Academy of Pediatrics

School food must protect the natural resources we need to produce food into the future

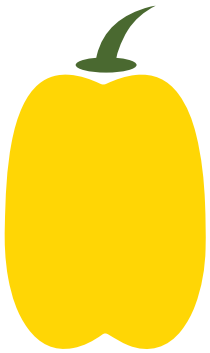
Industrial food production is rooted in a dependence on chemical and energy-intensive pesticide and fertilizer inputs as well as genetically engineered monocrops that are associated with significant environmental harm. Most animal products served in schools come from factory farms where tens of thousands of animals are raised in intensive, inhumane confinement and are routinely given antibiotics and other drugs.

Industrial crop production and factory animal farms produce massive amounts of greenhouse gases, toxic manure, and other pollutants that contaminate our air and water.[44] They are major drivers of deforestation, species extinction and pollution of our soil, water and fisheries.[44] This degradation of resources threatens the future of food production.[45]

Values-based school food initiatives are turning the tide

By recognizing the true cost of the dominant industrial school food paradigm, we can envision how to begin to shift resources toward a values-based paradigm that goes beyond economic efficiency and uniformity to incorporate social, health and environmental values. Instead of spending the $14 billion of taxpayer dollars used in the National School Lunch Program to exacerbate an unhealthy and unjust system, we must begin to invest in school food programs that center human and planetary health. While Conscious Kitchen provides one comprehensive model of a values-based school meal program, there are many examples of school districts adopting more sustainable procurement for a portion of their meals.

While Conscious Kitchen provides one comprehensive model of a values-based school meal program, there are many examples of school districts adopting more sustainable procurement for a portion of their meals.
At least eight school districts nationwide, including Los Angeles, Oakland, San Francisco and Escondido Union School Districts have adopted the Good Food Purchasing Program — a values-based procurement initiative that requires healthier foods, greater local sourcing, higher animal welfare standards, and more climate-friendly, plant-based, or organic options in school meals.[46] Sustainable foodservice consulting companies like Beyond Green provide comprehensive operational support for shifting school kitchens towards scratch-cooked foods, local sourcing, and zero-waste.[47] The Chef Ann Foundation provides grants to "Get Schools Cooking!" which is a strategic planning program that provides schools with the operational knowledge to transition from a heat & serve to scratch cook operational model.[48] Statewide and community based organizations in some regions of California offer support as well such as Community Alliance with Family Farms or Sierra Harvest in Nevada City, which support school districts in strengthening community through fresh, local, seasonal food.[49] Healthy Day Partners in San Diego supports communities in transforming school lunch programs from processed and packaged to fresh and nutritious.[50] Contacting local food policy councils or attending a farm-to-school conference could be a good way to identify potential partners.



III. CASE STUDY: IMPLEMENTATION AND LESSONS LEARNED FROM THE CONSCIOUS KITCHEN MODEL

Conscious Kitchen (CK) is a non-profit organization in Marin County, California that partners with K-8 public schools to transform their school meal programs. This section details how CK and schools work together to make changes in workforce and kitchen infrastructure, supply chains, menus, waste reduction, and community-student education.

We focus on the schools as the main actors and ultimate decision makers in transforming school food and highlight how Conscious Kitchen's support facilitated these changes.

This case study examines the three California schools in the San Francisco Bay Area that are currently implementing the Conscious Kitchen model. The Sausalito Marin City School District has implemented the model for the past seven years at its two schools, Bayside MLK Academy and Willow Creek Academy. Another public school, Peres Elementary School in West Contra Costa Unified School District (WCCUSD), completed a successful 2018-19 school year pilot program. All three schools are racially diverse, and 100 percent of students at Bayside MLK and Peres qualify for free and reduced meals. Peres is the largest of the schools, serving 536 students, while the Sausalito Marin-City schools serve 505 students combined.

Conscious Kitchen provides staffing, resources, and expertise to facilitate schools' transition to organically sourced, chef-prepared, scratch-cooked meals in low-waste kitchens. It serves as a one-stop-shop for technical support, leadership support, funding, and logistical coordination for schools as they transition their school meal programs.

Conscious Kitchen partners with schools from the start to assess needs, recommend a plan of action, fundraise, develop relationships, and build capacity. Once the groundwork is laid, Conscious Kitchen helps schools launch and operate the program.

Conscious Kitchen's long-term goal is for schools to pilot the program, adopt its practices, and eventually fully operate their own on-site and self-sustaining kitchens based on the model. We detail five key strategies, or investments, for school food transformation:

1) Serving fresh and scratch-cooked meals through investment in workforce and kitchen infrastructure
2) Expanding organic and regional sourcing through diverse supply chains
3) Designing plant-forward menus for healthy, cost-effective and climate-friendly meals
4) Reducing food and packaging waste
5) Educating and engaging students and the school community

We extract the top lessons learned and detail the benefits reaped from these interventions. This analysis offers an important window into the comprehensive systems-level change necessary to transform school food. We hope to inspire leaders at other schools — superintendents, food service directors, principals, teachers, and other stakeholders

> "Conscious Kitchen is showing that we can do this on a larger scale. If we can do it here, at a school where 100 percent of students eat free or reduced-price meals, then we can replicate it elsewhere."
>
> — Jawan Eldridge, Principal, Peres School

School Demographics and Meal Participation

School Stats	Bayside MLK Marin City, CA Sausalito Marin City School District	Willow Creek Academy Sausalito, CA Sausalito Marin City School District	Peres Richmond, CA West Contra Costa Unified School District
School type	**Public**	**Public Charter**	**Public**
Student population	**127**	**378**	**536**
Free and reduced meals	**100%**	**45%**	**100%**
Enrollment by ethnicity*	**30% Hispanic** **6.7% White** **3.4% Asian/Asian American** **48.7% Black/African American** **7.6% Two or more races**	**25.7% Hispanic** **41.8% White** **9.5% Asian/Asian American** **11.5% Black/African American** **10.5 % Two or more races**	**76% Hispanic** **2% White** **2% Asian/Asian American** **15% Black/African American** **2.4% Two or more races**
Average meal served per day	**120**	**283**	**706**
Meals served per year (breakfast + lunch)	**21,656**	**51,099**	**127,080**
Kitchen team	**Head chef, Maurice Lewis +1 additional staff**	**Head chef, Guillaume Pfahl +3 additional staff**	**Head chef, Keith Schauffel, + 3 full time staff, 2 part time staff, increased custodian hours**

*Census day enrollment by ethnicity[51]

"The positives are obvious...making sure that kids have healthy food every day has been and will be a cornerstone of what we believe in." Bayside MLK invests in the program because "the people who work here advocate that it be that way."

— David Finanne, Principal, Bayside MLK Academy

1. Fresh and Scratch Cooked: Investing in Kitchen Infrastructure and Workforce

Making fresh, delicious scratch-cooked food requires upgrading kitchen infrastructure, training kitchen staff, and hiring skilled cooks who use quality ingredients and recipes. Conscious Kitchen helped the three schools in this case study invest in food service jobs as well as in kitchen equipment and upgrades. Once these investments were made, scratch-cooked food became the most cost-effective way to create meals.

Making the kitchen and staffing transformation to enable scratch cooking is a major undertaking given that many school kitchens are in a state of disrepair due to underinvestment over the last forty years as districts have shifted to centralized, pre-packaged and outsourced food production. A recent UC Berkeley report on the state of California school food kitchens found that only 31 percent of schools have high levels of scratch-cooked meal capacity.[52]

The biggest barriers for many schools are funding for staffing and lack of kitchen infrastructure including dishwashers and stoves and basic culinary equipment such as knives and cutting boards.[53]

A. Rationale: Benefits of Fresh, Scratch-cooked Meals

There are a host of benefits to investing in scratch-cooked meals ranging from creating more good foodservice jobs for workers to improving students' nutrition and behavior outcomes. **Scratch cooking generates better jobs and could put over 80 percent of workers in full-time positions**. Scratch cooking requires more labor, which means investing in full-time school food service jobs that generate higher incomes, more work hours, health care and benefits. It also results in increased training opportunities that build transferable skills, leading to a more skilled workforce. Eighty-three percent of the food service employees at the three schools profiled in this report are now full-time. This is a huge win for school food workers who typically juggle multiple part-time positions.

"Building and staffing production kitchens is the most promising path for ending Big Food's colonization of school cafeterias and, eventually the cheap food ecnomy itself."

— Jennifer Gaddis, Author, The Labor of Lunch

Eighty-three percent of the food service employees at these schools are now full-time. This is a huge win for school food workers who typically juggle multiple part-time positions.

Creating better food service jobs advances gender and racial equity

Since most school lunch workers are women and women of color, investing in the school food workforce advances justice and equity.[54] Evidence shows that providing better jobs and support to women produces a strong multiplier impact: women are more likely to extend those benefits to their families and community, to invest in education and to recirculate that money locally.[55]

High quality food can improve educational outcomes

A growing body of research connects better nutrition with higher achievement on standardized tests; increased cognitive function, attention, and memory; and positive behavioral indicators, including better school attendance and cooperation. A 2009 study found that improved child behavioral scores were associated with higher consumption of leafy green vegetables and fresh fruit while lower behavioral scores were associated with takeaway (or fast) foods.[56] Research shows that breakfast, and in particular breakfast after the bell, enhances academic performance, physical health, and emotional well-being.[57]

> "When we eat Conscious Kitchen food, we can stay awake for the whole day."
>
> — 5th Grader, Peres Elementary

Increased school meal participation can boost food service revenue

When kids like school meals, full-paying students are more likely to participate, increasing revenue for the school meal program. A 2019 USDA study revealed that students participate more in school meal programs that provide high quality healthy food.58 Another way to increase participation and revenue is to expand breakfast. California public schools would receive an additional $340 million in federal meal reimbursements if their breakfast programs reached as many low-income students as their lunch programs.[59] They are more likely to become adults with obesity, leading to increased risk of several serious health conditions including heart disease, type 2 diabetes, and cancer.[23]

Increased student participation reduces stigma of school lunch

Over reliance on highly processed heat-and-serve food has led to a stigma around poor quality school food.[60] This low-quality food is mostly served to students who qualify for free and reduced meals, a cycle that further entrenches racial and economic inequities.[61] Increasing participation creates a more equitable school food environment that helps reduce the stigma around school lunch.

Students prefer fresh, organic, scratch-cooked meals

Conscious Kitchen partnered with University of California at San Francisco's (UCSF) Family Health Outcomes Project to conduct a week-long comparison between Peres and a demographically similarschool in the same district, Montalvin Manor, which served a conventional heat-and-serve lunch (with a salad bar). Researchers found that fresh and organic food service improved student satisfaction — students preferred Peres' meals by 13 percent.[62] These results disprove the myth and industry narrative that kids do not like healthy meals.

B. Implementation

The transformation of school kitchens

Before making kitchen improvements, Conscious Kitchen partnered with school kitchen managers and city and county representatives to ensure that kitchens were compliant with federal and state agencies and met all food safety, health, environment, fire code, and zoning laws and regulations. At Sausalito Marin City School District, school kitchens at Bayside MLK and Willow Creek Academy were already up to date with all major equipment. Academy were already up to date with all major equipment. Both schools had ample counter space, working refrigerators and freezers, a three-compartment sink, a convection oven, stove top, and more. To fully cook from scratch, the kitchens needed additional storage capacity and tools such as blenders, food processors and mixers, stock pot burners, an ice machine, shelves for storage, and more.

blenders, food processors and mixers, stock pot burners, an ice machine, shelves for storage, and more. Conscious Kitchen helped the schools to secure additional tools for scratch cooking through corporate partnerships and fundraising. The equipment upgrades cost approximately $30,000 per kitchen (see Appendix for full list of necessary kitchen equipment and tools).

The Peres Elementary School kitchen was only built for heat-and-serve meals. To create a fully self-contained kitchen for scratch cooking, the kitchen would have needed major equipment updates including a gas stove with a hood for fire suppression, three compartment sink, industrial dishwasher, grease trap and ice machine. It also would have needed electrical and plumbing upgrades to accommodate these changes. Rather than spend the estimated $70,000 that would have been necessary to fully upgrade the kitchen, Peres and Conscious Kitchen staff opted to transform the Peres kitchen into a workable space through relationship building, education, and advocacy with necessary stakeholders. The Head Chef and Food Service Director led the delivery, installation and organization of new kitchen tools and organized an efficient process flow. Corporate partners donated and discounted tools to make many of the upgrades feasible. When major equipment changes were not an option, Conscious Kitchen worked with the kitchen team to devise creative workarounds. For example, the parent-teacher kitchen (adjoining the lunchroom) was used to wash dishes in a pre-existing three-compartment sink. Existing refrigerators lining the wall of the service line were used for cold storage as well as mobile freezer units in the kitchen. Initially, the kitchen lacked an oven and stove. CK partnered with the district's central kitchen to cook the hot entrées and deliver them to the school. On-site staff prepared breakfast and the lunch vegetable and fruit side dishes. In the fall of 2018, CK secured and installed a donated convection oven, which allowed on-site kitchen staff to prepare hot meals. By spring 2019, the Peres team was preparing most meals on site.

The transformation of menus

Conscious Kitchen collaborated with Willow Creek Academy's Head Chef Guillaume Pfahl and an outside consultant to create a Conscious Kitchen Cookbook of kid-friendly meals that serves as the foundation for menu planning and meal service for participating schools.[63] Each school and chef adapts and modifies the recipes to meet the cultural context and preferences of the school.

Investment in full-time positions and training for food service workers

With the infrastructure for scratch cooking in place, Conscious Kitchen helped all three schools to recruit and hire new staff or train existing staff to cook meals from scratch. When schools invested in more full-time positions, empowered kitchen staff as school leaders, and expanded training, food service staff were better equipped to deliver healthy, delicious, organic meals to kids in their community. Preparing food from scratch required more work hours from food service workers, meaning expanded job opportunities. Across all three schools, eight full time equivalent jobs were created. While typical school meal programs employ primarily part-time staff, 83 percent of the staff at the three Conscious Kitchen schools were full time.

Recruitment and hiring

At Sausalito Marin City School District, all kitchen staff were hired and paid as school employees. Conscious Kitchen helped recruit the head chefs at both schools and continues to support both head chefs as needed, providing time and expertise on menu development, procurement, ordering, and waste-reduction strategies.

At West Contra Costa Unified School District, Conscious Kitchen and the district developed a hybrid staffing model. Conscious Kitchen recruited and employed the head chef and a sous chef/project coordinator. The district employed two full-time and two part-time kitchen staff. Between WCCUSD's Nutrition Services and Conscious Kitchen, the pilot program employed four more people in the Peres kitchen. The WCCUSD Food Service Director estimated that the program would require six full time employees to run the program independently, depending on skill level of workers, efficiencies, and equipment.

It is important to note that food service workers at both school districts are unionized, long-term employees with a wealth of historical and operational knowledge. At Peres, union rules made it challenging for Conscious Kitchen to recruit head chefs for scratch cooking. To build out scratch cooking capacity in the future, the WCCUSD hopes to collaborate with the Culinary Arts Management Program at Contra Costa College to provide culinary training that enables unionized employees to qualify for lead chef positions.

Staff training and support

Staff needed additional training from the Head Chefs to build knowledge and proficiency in scratch-cooking. Training included food safety policies as well as receiving, storage, and preparation practices needed for cooking with raw and fresh ingredients. Conscious Kitchen and head chefs found that it was important to ensure that staff were informed and excited about the new recipes and menus, as staff are frontline champions of food service. When staff were supported and trained in scratch cooking and recognized and celebrated for their work, they generated more student and community interest in the school meal program. Empowered food service staff increased the capacity of school districts to manage their students' nutritional needs, including accommodating cultural preferences and tastes.

> "I'm most proud of getting the staff to a confidence level where they can achieve success every day. I love to see the staff proud, confident, and happy, going to work feeling good about themselves. On a scale of 1 to 10, I would say morale in the kitchen is a 9. It's really high."
>
> — Chef Keith, Peres Elementary

Employee leadership

The school lunch program at Peres benefited from the leadership of Maria and Teresa. Maria was a long-time employee and had

School Food Jobs Before And After Transitioning To Scratch Cooking

School	# of employees before	# of employees after	Difference
Willow Creek Academy	1 FTE*	4 FTE*	+3
Bayside MLK	1 FTE*	2 FTE*	+1
Peres	2 Part-time	4 FTE*, 2 Part-time	+4
TOTAL	3	11	+8

*FTE = full time equivalent

grandchildren in the district. She knew the districts' food safety rules and regulations, communication systems, and complex distribution and transport systems. Maria said she was committed to the Conscious Kitchen lunch program because, "My grandkids are in this district. The kids need to know about the environment, about farming, about not just relying on big business. They need to be healthy."

C. Lessons learned

The transformation of school kitchens

- In the short term, small upgrades to equipment, staff training and coordinated leadership enable some scratch cooking, even when infrastructure is not updated.
- Scratch cooking requires increasing the number of full-time food service staff. It is important to hire full-time positions and offer culinary training programs for employees to gain skills in menu planning, ordering, and scratch cooking.
- Menu planning and recipe development are key steps.
- Students reported preferring fresh, organic, scratch-cooked meals.

2. Expanding Organic and Regional Purchasing via Diverse Food Supply Chains

The schools in this case study serve 100 percent organic meals to students. While it is widely assumed that organic food is too expensive for school food service programs, the models discussed here show that organic purchasing is not only possible, but that the price can be on par with or lower than conventional school food. (See section V for a cost breakdown.)

Typically, schools source ingredients and pre-made meals through multi-year contracts with broadline distributors, like US Foods and Sysco or through the heavily subsidized US Department of Agriculture (USDA) Foods program and the Department of Defense (DoD) Fresh Program. Schools' food sourcing options are often limited by long term contracts with broadline distributors that use rebate systems that reward them for committing to purchase in large quantities from large suppliers over a long period of time. Contract provisions frequently specify price points, volumes, and other stipulations that accommodate the requirements of food service programs but reduce the ability of food service directors to modify contracts quickly or source large quantities of food outside this paradigm.[64] Broadline distributors do not offer the widest variety or most competitively priced organic products, and USDA Programs lack organic offerings.

To overcome these constraints, the schools profiled here developed relationships with regional companies dedicated to organic production and distribution. In some cases, CK also dropped off food that they purchased directly from farmers and farmers' markets. These shifts in purchasing to regional distributors that specialize in one food category, such as dairy or produce, as opposed to broadline distributors, required innovations in procurement tracking systems, as discussed below.

The participating schools benefit enormously from their location in the agriculturally rich San Francisco Bay Area. An abundance of organic food, available year-round, fosters competitive markets that allow school food service programs to negotiate better prices, and there is a well-developed organic distribution infrastructure. This model would need to be adapted based on each regions' unique landscape and distribution systems. Organic products are available in most California regions from specialized distributers (see Friends of the Earth's Organic Roadmap for more information on organic sourcing).

A. Rationale: Benefits of Organic Sourcing

There are many health, community, and environmental benefits of serving more organic food in schools. For an in-depth analysis of the positive outcomes associated with organic food and farming, see the Benefits Report from California Certified Organic Farmers.[65] The approach taken by the schools profiled here also prioritized local and regional purchasing when possible. Research shows that buying from local farmers recirculates dollars within the community and creates jobs.[66] According to the National Farm to School Network, every dollar reallocated to a local farmer or rancher generates, on average, an additional dollar in the local economy.[67]

> "Nourishing children with food grown without pesticides and that supports healthy soil aligns with our values, and demand from schools allows us to plan forward. It's a win-win."
>
> — Adriana Silva, Owner and farmer, Tomatero Farms

Reducing children's exposure to pesticides

Organic school meals reduce children's exposure to toxic pesticides. Studies show that switching to a full or partially organic diet rapidly reduces exposure to a wide range of pesticides.[69]

WHAT IS ORGANIC?

Organic food is certified through robust standards governed by federal law under the USDA National Organic Program. These standards prohibit synthetic pesticides, including an estimated 17,000 pesticide products allowed in non-organic agriculture.

The standards also prohibit GMOs (genetically modified organisms), synthetic fertilizers, irradiation and sewage sludge (treated toilet waste, which is allowed in non-organic farming as a fertilizer). In organic dairy and meat, the use of antibiotics, growth hormones or arsenic-based drugs is strictly prohibited, while over 450 drugs are allowed in non-organic production. The organic standards also require farmers to manage their land in ways that protect soil, water, and biodiversity.[68]

Reducing farmer, farmworker, and rural communities' exposure to pesticides

Farmworkers and their families are on the frontlines of pesticides exposure and suffer higher rates of acute poisonings, cancers, birth defects, asthma, infertility, autism and other neurological and reproductive effects as a result.[70] Organic agriculture reduces worker and rural communities' exposure to toxic pesticides.[71]

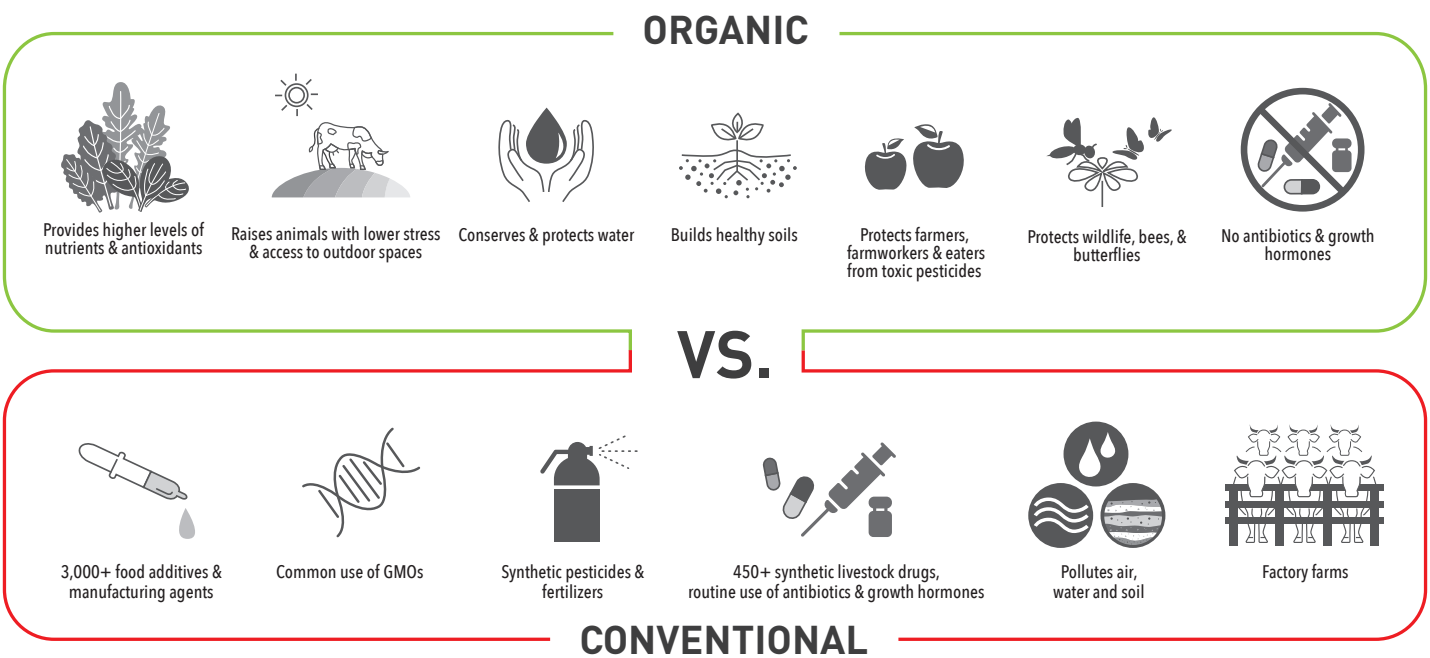
Eliminating routine use of antibiotics and other drugs in animal agriculture

When it comes to dairy and meat, organic producers do not use antibiotics, growth hormones or arsenic-based drugs, whereas over 450 drugs are allowed in non-organic production. The routine use of antibiotics in in animal agriculture is a major driver of the development of antibiotic resistant "superbugs" that threaten public health.[72] Research finds fewer antibiotic-resistant bacteria on organic meat, dairy, and eggs.[73] One study showed that levels of bovine growth hormones were 20 times lower in organic milk than in conventional.[74]

Providing food with improved nutritional profiles

Organic school meals increase children's consumption of nutrient-rich food. A recent meta-analysis of 343 peer-reviewed studies found "statistically significant and meaningful

ORGANIC VS. CONVENTIONAL



differences in nutrient composition between organic and non-organic crops," including higher levels of antioxidants, phenolic acids and flavanones.[75] Meta-analyses have found that organic milk has a more beneficial fatty acid composition, and higher levels of protein and polyunsaturated fatty acids (PUFAs).[76]

Providing economic benefits for farmers and rural communities

By investing in organic agriculture, school districts can play a critical role in strengthening regional food systems and equipping small and mid-size growers to sell to institutional markets. Data show that diversified organic farming is more profitable for farmers and often creates more jobs than conventional farming systems.[80] Research also shows that organic food systems can help address rural poverty.[81]

B. Implementation

Organic supply chains: Distributors, grocers, and farmers

Some regional distributors were able to offer school-friendly prices and accommodate the schools' need to purchase large volumes of food efficiently and conveniently.

Regional distributors and food companies

Earl's Organic Produce

Earl's is one of only five distributors in the country that is organic certified. By partnering with Earl's, schools were able to access organic produce through an ordering, delivery and accounting system that met the needs of institutional food service. The three schools purchased 86 percent of their produce from Earl's during the 2018-19 school year.

The schools worked with Earl's to prioritize local produce when possible, within Earl's distinguished local zones of 100 miles, 250 miles, or the state of California. Schools' ability to source produce locally varied by season and was constrained by their need for large and consistent volumes every day.

Modesto Food Distributors and Rock Island Distributors

The schools sourced organic chicken and eggs produced by Mary's Chicken through either Modesto Food Distributors or Rock Island Distributors. Mary's products are free-range and raised within 250 miles of participating schools. Mary's sells chicken to many schools in the Bay Area, the majority of which (including those profiled in this report) purchase drumsticks because they are the most affordable cut.

Mindful Meats

The schools sourced beef through Mindful Meats, a subsidiary of Marin Sun Farms, which operates the last USDA inspected slaughterhouse in the Bay Area. Mindful Meats sources beef from certified organic cows raised in Marin County both for dairy and for beef.

Veritable Vegetable and Straus Creamery

Schools purchased milk and yogurt from Straus Family Creamery through San Francisco based distributor Veritable Vegetable. Straus is the first 100 percent organic creamery in the United States and has been highly influential in building a market for local, organic dairy products in the Bay Area. Straus was able to offer school-friendly prices for high quality products.

United Natural Foods, Inc. (Unfi)

Specializing in organic, natural and specialty food products, UNFI provided participating schools with organic pantry and dry goods such as rice, beans, pasta, spices, oils, condiments and more.

Local Grocer

Good Earth Natural Foods, an independently owned organic grocery in Marin County, has been a key collaborator. Good Earth helped set up relationships with produce supplier, Earl's Organic, and dry goods supplier, UNFI, and served as a drop-off site for these distributors early on when schools could not meet minimum order requirements or while they were setting up vendor relationships. Good Earth also has a preexisting school meal program that prepares and delivers hot meals to schools in Marin.

Local and farm direct purchasing

The constraints of institutional food procurement make purchasing directly from farmers challenging. However, prioritizing direct purchasing when possible allows schools to build strong relationships with local farmers and benefits the local economy. In 2018-19, participating schools purchased nearly 15 percent of their produce via direct relationships with farmers brokered by CK.

Inventory tracking systems

Most existing food service software is unable to track social and environmental attributes, making it difficult for food service directors and staff to integrate values-based procurement into their tracking and accounting systems. All three schools collaborated with Conscious Kitchen to develop new systems for managing inventory, making cost-effective purchasing decisions, communicating with multiple vendors on a weekly basis, and tracing values-based purchases to measure impact and inform future decision-making.

At Sausalito Marin City School District, the smaller scale of food service made it easier to manually track inventory, purchases, and values-based attributes. In addition, a dedicated teacher volunteer compiled monthly food purchases in a spreadsheet. This tracking allowed the school to manage its costs more efficiently. Conscious Kitchen staff used the teacher's spreadsheet and the yearly menu to help the Willow Creek Academy kitchen team identify more opportunities to swap meat-based proteins for plant-forward dishes.

At Peres Elementary, the project coordinator at Conscious Kitchen managed and tracked inventory, purchasing and menus, using Google suite tools for record-keeping. However, the system proved unable to easily share information across decision-makers, leading to communication breakdowns. A few times, food items were over- or under-ordered, creating food waste or putting stress on the kitchen team to cobble together last-minute alternatives. Peres found that tracking and ordering challenges can strain relationships with vendors and within the kitchen team.

The Conscious Kitchen model reallocates institutional purchasing dollars to provide a steady income to farmers and ranchers that adhere to climate-friendly practices.

Schools' Produce Purchasing Through Earl's Organic by Zone and Season

	100 miles	250 miles	CA-Grown
September	**38.8%**	**59.73%**	**76.80%**
January	**4.50%**	**4.50%**	**23.70%**
May	**17.58%**	**29.97%**	**48.75%**

Note: These are not mutually exclusive categories. All purchases from farms within 100 miles are also within 250 miles, and are also grown in California

C. Lessons learned

- Participating schools were able to purchase 100 percent organic food at prices on par with or lower than conventional food.
- Organic ingredients are more affordable when food is purchased locally and seasonally.
- Partnerships with values-aligned food producers, wholesalers, distributors, and grocers are critical.
- Having a streamlined inventory tracking system in place will allow values-driven communicate social and environmental attributes to"tell the story" of values-based procurement. If done successfully, these systems would allow staff departures or absences to occur without disruption to values-based purchasing.
- An on-site procurement and menu specialist hired by the district is needed to help coordinate logistics associated with increased regional organic sourcing, including budgeting, staffing, sourcing from multiple suppliers, and developing compliant menus and recipes.

3. Designing Plant-Forward Menus: Healthy, Cost-Effective, and Climate-Friendly Meals

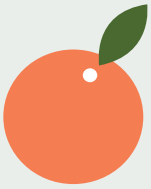
The schools profiled in this case study increased the number of plant-forward options on their menus. By replacing a share of meat, poultry, and cheese with plant-based and plant-forward options, schools can save money while improving students' access to healthful foods and reducing the schools' carbon footprints.

A. Rationale: Benefits of Plant-forward Menus

The meat, eggs, and dairy at the center of many school meals are also at the center of our world's greatest threats to the environment, public health, workers' rights, and animal welfare.

Animal products are resource-intensive foods, requiring massive water and energy inputs. They also generate significant greenhouse gas emissions, soil, air, and water pollution. In order to avert the worst impacts of climate change, we must produce and eat "less and better."

This means consuming fewer animal products, supporting the farmers who are raising animals sustainably, and making sure that everyone has access to the healthiest options.



PLANT FORWARD & PLANT-BASED

"Plant-forward" refers to a diet or a food dish that emphasizes plants instead of meat and dairy, but that does not consist solely of plant-based foods. "Plant-based" refers to food that is wholly derived from plants, including vegetables, legumes, grains, nuts, seeds, and fruits.

Cost savings

Depending on the product and kitchen capacity for scratch cooking, plant-based menus can save school districts money if participation rates remain steady. An Oakland Unified case study found that by shifting to plant-forward meals, the district saved over $42,000 in a school year and student participation in the school meal program increased due to a focus on local and fresh foods.[83] These savings can be reinvested in expanding staff hours to support high-quality food preparation. These cost savings are harder to realize in heat and serve kitchens that are more reliant on higher cost pre-packaged processed items like a bean burger, which costs more than the heavily subsidized hamburger.

> "Greater emphasis on healthy-plant-based foods – including plant-based proteins – is the single most important contribution the food service industry can make toward environmental sustainability."[82]
>
> — The Culinary Institute of America and the Harvard T.H. Chan School of Public Health

Contributing to healthier diets

There is broad expert consensus that eating more plants and less meat is better for our health.[84] The U.S. Dietary Guidelines assert that Americans are eating too much meat, and that children are not eating enough vegetables, legumes, nuts, seeds and other plant-based foods.[85] High consumption of red meat, especially processed meat, is associated with increased rates of cancer, heart disease, obesity, diabetes, and a shortened life span.[86] Meanwhile, diets high in vegetables, fruits, whole grains, and beans help prevent these diseases,

saving our nation billions of dollars in costs from diet-related chronic diseases.[87]

Reducing exposure to dioxins

Cutting meat consumption in favor of plant-based meals diminishes exposure to potent carcinogens called dioxins that accumulate in the fatty tissues of animals. According to the World Health Organization, more than 90 percent of human exposure to cancer-causing dioxin-like compounds (DLC) comes from meat, dairy, fish and shellfish.[88,89]

Protecting antibiotics for human medicine

To help animals survive stressful and unsanitary conditions, factory farms often rely on routine antibiotic use. In fact, nearly two-third of antibiotics important to human medicine in the U.S. are sold for animal production purposes. This overuse contributes to antibiotic-resistant "superbugs," a major public health threat that undermines the efficacy of these life-saving medicines.[90]

Protecting rural communities from factory farm pollution

Most meat production in the U.S. is in factory farms. These factory farms wreak havoc on neighboring communities — disproportionately communities of color — by destroying air and water quality. Living near factory farms increases risk for respiratory disease, pulmonary disease, and other adverse health outcomes.[91] Plant-forward diets funnel procurement dollars away from these destructive farms.

Generating climate and other environmental benefits

Studies show that we cannot avert the worst impacts of climate change or protect future water supplies unless we reduce meat and dairy consumption in favor of plant-forward meals.[92] Eating less meat and more plants saves resources and helps us preserve the land, water, and soil needed for future food production. It takes six times as much water to produce a gram of beef protein as it does to produce a gram of lentil protein,[93] and beef production emits 16 times more greenhouse gas emissions than production of these healthy legumes.[94] (See Appendix for chart comparing the GHG emissions of common foods.)

Because California schools serve over one billion meals annually, shifting toward plant-forward menus can have a profound positive impact on the health of students and the environment for generations to come, at little or no additional cost to school districts. Across we calculate the carbon reduction benefits of just one switch: replacing a hamburger for a Spanish rice and bean dish once a month in all of the elementary schools for a district the size of WCCSD, which serves approximately 10,000 lunches per day.

Because the burger is more than 20 times as carbon intensive as the plant-based meal, the environmental savings are considerable: equal to taking 63 cars off the road, saving 33,000 gallons of gas or planting 5,900 trees.

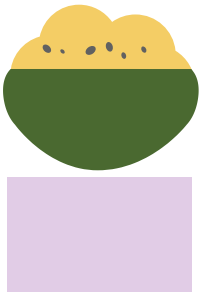
B. Implementation

At Sausalito Marin City School District, Willow Creek Academy's head chef and district leadership worked with Conscious Kitchen staff to identify cost-savings to address budget cuts. They discovered that Willow Creek could save $9,450 per year by swapping out some beef-based meals for plant-forward and plant-based options. Conscious Kitchen used menu-level budgeting over a month to keep costs within budget. A product or recipe that was slightly above the budget per meal was balanced with a lower cost product or recipe. For example, a BBQ chicken recipe was slightly above the budget per meal, so it was balanced with a bean and rice meal the same week.

At Peres Elementary School, the school reduced its carbon footprint by serving two to three plant-forward lunches and five plant-forward breakfasts each week. The school district, WCCUSD, serves plant-forward breakfasts three times a week and provides a Meatless Monday. Peres serves plant-forward lunches 58 percent of the time, while 20 percent of lunches across the WCCUSD are plant-forward.

Replacing a Burger with Spanish Rice and Beans Generates Major Climate Benefits*

A HAMBURGER IS 20X AS CARBON INTENSIVE AS SPANISH RICE AND BEANS



BURGER

6.74 CO2 eq /per serving

SPANISH RICE + BEANS

32 C02 eq /per serving

Swapping that burger for the rice dish generates the following savings:

63 CARS OFF THE ROAD

5,900 TRESS PLANTED

*Based on a school district that serves approximately 10,000 elementary school lunches

When plant-forward meals were first introduced, school lunch participation at Peres declined. With Conscious Kitchen's help, the kitchen team engaged students in taste tests, adapted meals to fit cultural preferences, and educated students and school staff on the benefits of plant-forward meals. These strategies ultimately led to more students eating the meals. For example, Peres originally served a nacho rice and bean dish. However, after receiving feedback from students, Conscious Kitchen worked with Teresa, a WCCUSD food service worker, to develop a Spanish rice recipe that added flavor and familiarity, making it more popular.

C. Lessons learned

- Scratch cooked plant-forward and plant-based meals are often less expensive than meat-based dishes, creating budget flexibility to purchase organic ingredients and better-quality meat.
- Staff training is needed on best practices for plant-forward and plant-based procurement and menu design.
- Culturally appropriate foods and recipes are vital for making plant-forward meals delicious and for increasing participation among a diverse student body. To succeed, climate-friendly recipes must be accepted by students and adapted to each district's cultural contexts, sensitivities, religious traditions, and cooking capacities.
- Taste tests are a key strategy for understanding cultural preferences

4. Food and Packaging Waste Reduction

School meal programs generate significant amounts of landfill-bound waste.

Conscious Kitchen worked with school principals, maintenance and operations teams, and food service teams to employ cost-effective strategies to reduce packaging and food waste through prevention, recycling and composting.

A. Rationale: Benefits of Reducing Waste

Reducing food and packaging waste has the potential to save money, divert waste, reduce emissions, save water, and recover meals. Preventing food waste saves water and reduces greenhouse gas emissions by reducing the water and energy resources required to produce, process, and transport food and packaging, and cutting the significant methane emissions associated with landfill-bound food waste. When food waste goes to the landfill, it rots and releases methane, a GHG that is 80 times more potent than carbon dioxide.[95] Approximately 11 percent of food system GHG emissions are from wasted food.[96]

B. Implementation

Preventing packaging waste

To prevent the waste of single-use plastics and packaging associated with typical heat-and-serve meals, all three schools served meals out of metal hotel pans with reusable serving utensils. Food was served on reusable plates and utensils at Bayside MLK and Willow Creek Academy. At Peres, food was served in compostable containers. Utensils at Peres were the only non-compostable, non-reusable component, and they were collected separately and recycled. Conscious Kitchen sourced the reusable and compostable equipment and, at Peres, facilitated orders between the compostable goods supplier and the school.

Preventing food waste

Chefs and kitchen teams prevented food waste by not creating it in the first place. Conscious Kitchen staff helped head chefs implement monthly meal planning, weekly food buying, and standardized storage and labeling practices according to demand.

Chefs were able to creatively integrate leftovers into new meals to reduce waste. At all three schools, the kitchen team serves smoothies on Fridays to reuse leftover fruit from the week. The students love smoothie Fridays and the chefs love coming up with creative smoothie options. Another example is the breakfast frittata where chefs integrate roasted vegetables from the previous lunchtime into the breakfast.

Schools prevented waste and saved money by buying in bulk. For example, Conscious Kitchen negotiated a relationship with Straus Creamery that allowed all three schools to purchase milk in 5-gallon bulk bags and serve it out of dispensers, preventing the major waste stream of single-use milk cartons.

Affordable, Organic, Plant-Forward Menu Items from Conscious Kitchen

Plant-forward recipes can save money

Plant-Forward Meals (100% organic)	Food Cost per Meal
Pasta marinara, roasted cauliflower, and orange slices	$1.43
Nachos with pinto beans, salad and apple slices.	$1.51
Vegan chili, roasted broccoli, and fruit salad	$1.17
Grilled cheese, roasted potatoes, and mandarin oranges	$1.07

Top plant-based and plant-forward recipes served:

- Vegetable chili (V)
- Minestrone soup (V)
- Pasta marinara (V)
- Bean and cheese nachos (Veg)
- Pesto pasta with pepitas (Veg)
- Mac and cheese (Veg)

The schools are all classified as "offer vs. serve," meaning that milk does not need to be served to every student as long as it is an option. Students took milk only if they wanted it and threw less milk away. When schools can order based on what students want, they can reduce waste and save funds.

Recycling and composting food waste and packaging

Conscious Kitchen staff helped all three schools install recycling and compost bins. At first, however, students and school staff did not sort trash. At Peres, Conscious Kitchen partnered with Recycle More to educate the school on waste management and reduction, and to empower student ambassadors and school and kitchen leadership to change the school culture around waste. Adding composting and recycling also increased workloads for the school custodian at Peres, who was already operating at capacity; so Conscious Kitchen worked with the district to increase his hours.

C. Lessons Learned

- It is feasible to create school meal models that decrease waste.
- Good menu planning for scratch cooking reduces food waste by not creating it in the first place.
- Waste can be minimized by improving product development, storage, shopping/ordering, marketing, labeling, creative menu design and cooking methods.
- Investing in new equipment like metal serving ware and milk dispensers dramatically reduces the single-use containers and plastic packaging used in heat-and-serve meals.
- Integrating composting and recycling into waste management requires consistent education and investment from school leaders, kitchen staff, teachers, and students, and may increase custodial work hours and income.

5. Student and Community Education and Engagement

School dining facilities should be considered as much a place of learning as the classroom, art room and recreation field. Toward this vision, Conscious Kitchen staff developed the Student Ambassadors Program, created resources for implementing a "hospitality mindset" in the dining hall, and at Bayside MLK, provided funding support for a school garden teacher. This engagement improved student nutrition education and increased participation in school meals, a main driver behind school foodservice profitability.

A. Rationale: Benefits of Education and Engagement

Student education and engagement in initiatives like the Student Ambassador Program ensure that students have a seat at the table to shape the school food system for themselves and future generations. When students participate, school food is more likely to represent the diverse cultures and values of the community that it serves. When students are eating delicious food, are educated about just and sustainable food systems, and are more involved with food through cooking and gardening, they are more likely to participate in school lunch and become future advocates for a healthy and sustainable food system.

The importance and efficacy of nutrition education for increasing student lunch participation and student acceptance of healthy foods is echoed by academic research. Children who participate in school meal programs tend to have healthier diets than their peers.[97] In schools that provide frequent, high-quality opportunities for hands-on nutrition learning, like school gardens, students eat up to three times more fruits and vegetables at school lunch, regardless of whether that food was grown in the garden. It takes only 35-50 hours of nutrition education to create long-term behavioral changes such as consuming more fruits and vegetables.[98]

B. Implementation

Student nutrition education

The Student Ambassadors Program is a lunchtime and afterschool program for students in grades 3 to 6. Students apply to the program and are oriented by designated teacher liaisons. The program gives students the opportunity to get hands-on kitchen experience, learn about healthy food choices and food systems, and connect with their peers.

At Sausalito Marin City School District, robust student education and engagement programming helped Willow Creek Academy's meal participation rates remain relatively stable. WCA's head chef, Guillaume, and the Conscious Kitchen teacher-liaison, Kelly, volunteered to run the Student Ambassadors Program. It included lunch time student volunteer shifts in the dining hall, an afterschool cooking course, and an Eco Top Chef Challenge cooking event. Chef Guillaume used funding in the school food service budget and support from Conscious Kitchen to purchase materials to launch the program, including kid's aprons, knives and cookware. To meet ongoing costs such as ingredients and field trips to partner farms, Guillaume and Kelly secured $300 in grant funding, ingredient donations and material support from Conscious Kitchen. The head chef and teacher were supported by school leadership and were able to easily coordinate with parents, teachers

> "I feel proud daily because I'll see a kindergartener who isn't interested in trying a new food. I'll engage them, and that interaction with that child might eventually lead to trying new foods and building healthy habits."
>
> — Chef Guillaume, Willow Creek Academy

Due to deep resource inequities, Bayside MLK faced challenges not encountered by better-resourced schools. Chronic funding shortages made it harder to free up volunteer time to maintain a formalized ambassador program. Funding inequalities and disinvestment have drained staff resources, so Bayside MLK struggled to maintain the support and consistency to coordinate the program. Despite these constraints, Chef Maurice and Chef Armando built strong relationships with students, often asking students for feedback on meals and tweaking recipes to meet taste preferences. They also supported student volunteers during lunchtime. With additional funding, they would like to lead an afterschool cooking program.

Beyond the kitchen, Bayside MLK and Conscious Kitchen collaborated to fund and maintain a school garden and a garden coordinator for the last seven years. The garden was integrated into daily curriculum across grade levels. The garden and outdoor classroom featured hands-on interactive lesson plans that allowed students to engage their five senses and participate in food production.

At Peres Elementary, Conscious Kitchen's program coordinator partnered with a volunteer teacher to lead the ambassadors program for 3rd to 8th grade students. Students volunteered during lunch and met once a week after school to participate in food and nutrition education activities. During the year-long pilot, Conscious Kitchen's coordinator also collaborated closely with school leadership to organize educational and celebratory events for the community and stakeholder meetings for program feedback and improvement.

A hospitality mindset

Students are more engaged and excited about healthy food when schools implement a hospitality model and mindset.

Conscious Kitchen staff helped schools create a friendly eating environment and community hub where students would want to spend more time eating and socializing. Conscious Kitchen collaborated with the kitchen teams at all schools to transform their dining room into a convivial and welcoming environment, by:

- Putting tables together so students could face one another when eating
- Setting the tables with seasonal flower bouquets provided by Conscious Kitchen each week
- Playing calm background music, like jazz or classical
- Having chefs wear white chef coats
- Decorating the dining room with colorful

C. Lessons Learned

- Student education and engagement programs are necessary and should be run by staff employed by the school district and integrated into the community. School staff and leadership are effective spokespeople who can inspire healthy eating habits and implement systems-level changes.
- There are opportunities to collaborate with county offices of education and health departments to improve nutrition education programming.
- Nutrition education works best when it is valued and integrated into the curriculum.
- Leadership opportunities that empower students to educate one another on the benefits of healthy eating are highly effective.
- Creating cooking class opportunities and a "hospitality mindset" in the dining hall with positive messaging improves student buy-in.
- Developing effective communications and marketing will engage the community and secure support from teachers, parents, administration, food districts and students.

IV. THE COSTS OF TRANSFORMING SCHOOL MEAL PROGRAMS

The $14 billion in federal funding for the National School Lunch Program is often inadequate for providing high quality food to kids while also supporting good-paying jobs and a clean environment.[99] Most California schools rely on federal reimbursements along with small additional state reimbursements as their primary sources of revenue. But almost all school meal programs need additional revenue to support shortfalls in USDA reimbursements. To boost operational revenue, many school meal programs rely on school district general funds, a la carte sales, catering services revenue, or contracts with community programs such as Head Start and childcare or elder care centers to supply meals.[100] Schools also rely on non-profit partners, parent associations and other community-centered initiatives to raise additional funds.

School food funding provided through the federal government is inadequate for providing high quality food to kids while also supporting good-paying jobs and a clean environment.

The three schools profiled in this report, like others in California, were operating within constrained budgets. Each school's partnership with Conscious Kitchen was crucial to fundraising and building the capacity, leadership, and innovation needed to make new investments. In some cases, Conscious Kitchen provided direct financial support.

The schools used various approaches to cover the additional cost of Conscious Kitchen meal programs by:

"Before, all the tables were facing in one direction, now they are facing together, the students get to have conversation with their peers, and it just makes the whole dining experience a lot better with all those things in place. Including the great food!"

— Chef Guillaume,
Willow Creek Academy

allocating money from general funds toward school food; leveraging philanthropy to fill the gap when transitioning a program; and increasing student participation, particularly among paying students. The long-term goal is for schools to run self-sustaining school meal programs. In this section we discuss some of the strategies used by all of the schools and also provide a breakdown of school meal costs for Peres Elementary, revealing that labor, rather than food, was the highest cost associated with switching to 100 percent organic, scratch-cooked meals. The $14 billion in federal funding for the National School Lunch Program is often inadequate for providing high quality food to kids while also supporting good-paying jobs and a clean environment. Most California schools rely on federal reimbursements along with small additional state reimbursements as their primary sources of revenue. But almost all school meal programs need additional revenue to support shortfalls in USDA reimbursements. To boost operational revenue, many school meal programs rely on school district general funds, a la carte sales, catering services revenue, or contracts with community programs such as Head Start and childcare or elder care centers to supply meals. Schools also rely on non-profit partners, parent associations and other community-centered initiatives to raise additional funds.

Budget Strategies

Modest general fund support can produce big returns

The Sausalito Marin City School District allocated $126,800, or 1.6 percent of the district's general funds to support the transformation of the school meal programs at Bayside MLK and Willow Creek Academy. This amounts to $251 per student per year. Leaders at SMCSD stated that the greater investment in school food was an investment in improved education and health outcomes for students. Along with these allocations, Bayside MLK funds its Conscious Kitchen program with federal and state reimbursements for school meals; Willow Creek Academy funds its program with federal and state reimbursements and revenue from students and teachers who pay for lunch.

Leveraging philanthropy to fill the gap and spur innovation

The pilot program at Peres was funded through federal and state reimbursement based on student participation rates and private philanthropy to cover the shortfall. The breakfast meal based on the Conscious Kitchen model cost $0.76 more per student and the lunch meal cost $1.33 more per student than what the district received in reimbursement. In total, this amounted to a $142,432 additional annual cost for school meals, or $265 per student, that was not covered by reimbursement. Conscious Kitchen fundraised to cover this shortfall through private philanthropy. The deficit does not include the cost of capital investments in kitchen infrastructure and equipment. Equipment donations came via corporate partners as well as philanthropy. By leveraging philanthropy to create a program in a cash-strapped district, Conscious Kitchen was able to channel resources to a community that has been systemically overlooked and underfunded.

Generating revenue through school food participation

The key to expanding healthy, organic, scratch-cooked meals in districts across California is to ensure that kids want to eat school food. For most schools in California, revenue relies heavily on increasing student participation. Unfortunately, the over reliance on highly processed heat-and-serve food in most public schools means that students dislike the food, leading to reduced participation and a stigma around school food.[104] Students who can afford other options tend to opt out of school lunch programs. In contrast, a fresh and organic food model improves student satisfaction and participation. In a UCSF study, students preferred meals from the Conscious Kitchen model to conventional meals by 13 percent.[105] Fresh, organic, scratch-cooked meals can be one way to encourage more paying families and teachers to participate in the school meals program.

Snapshot: Peres Elementary Cost Analysis

As a large, racially diverse school, Peres Elementary is representative of many California schools. There are 536 students at Peres, all of whom qualify for free and reduced meals.This analysis compares the average daily costs for breakfasts and lunches per student at Peres Elementary during the year it piloted the Conscious Kitchen model with the federal USDA reimbursement rate plus California reimbursement rate and the average reported costs for NSLP meals.[101,102]

Cost Comparison at Peres School (2018 – 2019)

Food cost comparison with NSLP*

	Breakfast	Lunch	Both meals
Peres food cost	$1.24	$1.58	$2.82
Average NSLP food cost per meal	$1.22	$1.71	$2.93
Difference at Peres	**+$0.02**	**-$0.13**	**-$0.11**

Labor cost comparison with NSLP

	Breakfast	Lunch	Both meals
Labor cost at Peres	$1.80	$3.15	$4.95
Average NSLP labor cost per meal	$1.22	$1.71	$2.93
Difference at Peres	**+$0.58**	**+$1.44**	**+$2.02**

Total meal cost comparison with USDA** and NSLP

	Breakfast	Lunch	Both meals
Total cost at Peres	$3.14	$4.90	$8.04
USDA + state*** reimbursement rate	$2.38	$3.57	$5.95
Difference at Peres	**+$0.76**	**+$1.33**	**+$2.09**
Average NSLP meal cost	$2.72	$3.81	$6.53
Difference at Peres	**+$1.09**	**+$0.42**	**+$1.51**

*NSLP data from School Nutrition and Meal Cost Study, USDA, 2019
**USDA data reported by California Nutrition Program Reimbursement Rates, 2018-2019
***USDA reimbursement was $2.14, CA state reimbursement was $0.14

Food cost comparison

We found that Peres' daily organic food costs for breakfast and lunch combined were $0.11 less than the reported NSLP average. Once most public schools have paid for labor, supplies, benefits and other indirect costs, school food directors report spending an average of $2.93 for food ingredients for students' lunch and breakfast.[103] Whereas at Peres, once other costs were accounted for, daily food costs for breakfast and lunch were $2.82 on average. This means that **Peres was able to purchase 100 percent organic food for less than the average school meal food costs.**

It is important to note that comparing food costs between scratch cooking and heat-and-serve foods is not an apples to apples comparison. Built into the costs of prepackaged food are a multitude of hidden costs paid to private vendors — typically large, multinational corporations — including profit, packaging, labor, marketing, rebates and overhead. And since few staff are needed to reheat and serve these meals, school food programs offer low paying jobs, leading to chronic hiring and retention challenges.

Labor cost comparison

We found that Peres' daily labor costs for breakfast and lunch combined were $2.02 higher than the reported NSLP average. **This means that the biggest barrier to serving fresh, organic food was not the cost of the food, but the cost of increasing staffing and training to equip workers to prepare food from scratch.**

As discussed above, Peres required four new full-time-equivalent food service positions to implement the Conscious Kitchen model, representing a meaningful investment in steady jobs with livable pay.

These additional costs represent an investment in major long-term benefits for health,education, labor, and the environment that come with this dramatic paradigm shift in school food.

Meal cost comparison

Total meal costs include food, labor, and indirect costs like supplies and employee benefits. We found that Peres' daily meal costs were $1.51 higher than the reported NSLP average and $2.09 higher than the federal USDA reimbursement plus California reimbursement. The USDA difference is higher because federal reimbursement is the absolute minimum that schools would have to cover costs — typically schools supplement this with other funds. The NSLP difference is lower because it reflects what schools report spending on school meals. Data reflect 2018-19 California and USDA reimbursement rates; given changes in reimbursement rates and food costs from year to year, and the specifics of each school, costs will vary. In other words, **cooking 100 percent organic, healthy meals from scratch required making an investment of $2.09 more per student per day (for both breakfast and lunch) than state and federal reimbursements, or $1.51 more per day than the reported average cost of a school meal.**

V. RECOMMENDATIONS

Many food service directors and their staff share a vision of healthier, more equitable and sustainable food service. They want to upgrade their kitchen operations and improve their menus, recipes, and sourcing to provide fresh food and scratch cooked meals to students. But vision and commitment only go so far. Making it possible to serve scratch cooked and/or speed scratch school meals across our state will require policymakers and philanthropists at the local, state, and federal level to step up and dedicate meaningful resources to the effort. While policy reform at the federal level, especially in terms of making school meals universally free will have the biggest impact on school food service programs, this report focuses primarily on what can be done at the state and school district levels.

"We are so proud of our lunch program! Our students are very knowledgeable about where their food comes from and why healthy eating is important. Chef G and our kitchen staff are loved and admired by students and staff alike, and our parents are amazed to hear about their child enjoying fruits and vegetables that are new to them."

— Emily Cox, Principal
Willow Creek Academy

State Policymakers

While structural transformation of school food service will require federal policy level reforms, there are many ways that state policy makers can support healthier school meals, improved conditions for school food workers and values-based food procurement. The 2020-21 budget allocation of $10 million for the California Department of Food and Agriculture's (CDFA's) Farm to School Program creates a unique opportunity to provide more resources and energy to reshape school food in California.

Key Recommendations:

- Provide consistent annual funding to CDFA Farm to School Program.
- Allocate at least $70 million for school food personnel training and healthier school meals — the amount proposed by Governor Newsom's in his pre-COVID January 2020-21 budget proposal.[106]
- Increase allocations of CDFA's $22 million Specialty Crop Block grant program for projects that will directly benefit schools.
- Advocate for DoD Fresh Program operating in the state to prioritize purchases from organic and climate-smart agricultural producers.
- Support values-driven and healthy school food procurement via legislation similar to previous supporting organic (AB 958); plant-based foods (AB 479), and stronger school food nutrition standards (AB 2949).[107]
- Advocate for policy changes at the federal level, including more funding for kitchen equipment and facilities, scratch cooking training, farm-to-school programs and stronger nutritional standards and higher meal reimbursement rates in the 2021 Child Nutrition Reauthorization Act.
- Advocate for funding increases in the 2022 Farm Bill for programs that support healthy food and regional food systems, including the Fresh Fruit and Vegetable Snack Program, the DOD Fresh Program, Section 32 fruit, nut, and vegetable purchases for nutrition programs,

Local Agriculture and Marketing Promotion Program, the Specialty Crop Block Grant Program, among others.[108]

Philanthropists

While structural transformation of school food service will require federal policy level reforms, there are many ways that state policy makers can support healthier While federal and state policy reforms are crucial for lasting structural change, philanthropists across sectors can fill a critical resource gap and use private funds to leverage more state and federal funding for school food transformation.

Key recommendations:

- Invest and pool resources to help school districts make changes in procurement, staffing, and culinary infrastructure that will achieve multiple beneficial outcomes.
- Support local bond measures focused on upgrading kitchen infrastructure.
- Focus on a select number of school districts to build models.
- Support additional research and case studies that document the benefits of improving school meals.
- Expand support for NGO and community engagement, technical assistance, advocacy, and support for healthy and sustainable school food.

Schoolboard members

School board members are critical advocates and thought leaders who should be engaged early on in any school food shift. They can help provide leadership and the resources needed to upgrade kitchens and to make the transformation sustainable — both financially and by ensuring that school meals are treated as a core part of students' educational experience.

Key Recommendations:

- Allocate a portion of General Fund dollars to support recurring personnel costs that enable full-time, quality jobs and allow for healthy scratch cooking capacity.
- Support local bond measures that provide long-term financing for kitchen and facility upgrades.
- Provide funding and other support for implementing and expanding school gardens and nutritional education and curriculum integrated with the school food cafeteria experience.
- Advocate for increased state and federal funding to support healthy school food.

All school districts

School districts, especially school food professionals, can make a difference by advocating for increased funding for healthy school food programs and seek grant to support new programs.

Key recommendations:

- Apply for CDFA Farm to School and Specialty Crop Block Grant Funding to support local, organic, and healthy food programs in your school district.
- Advocate directly for higher quality organic and plant-forward food in USDA Foods, especially in the DoD Fresh Program..
- Work with your professional associations to advocate for greater support in the Child Nutrition Reauthorization Act for scratch cooking training, kitchen equipment and facilities, Farm to School programs, and stronger nutritional standards.
- Pursue collaborative local and organic procurement strategies with school districts in your region.
- Educate and inform public officials about school food operations and needs so that they are well positioned to champion them once the opportunity arises.

School districts with scratch-cooking capacity

These case studies show that values-driven

procurement that addresses hunger and benefits children's health, food service workers, and the environment is financially viable for districts that have been able to invest in a skilled workforce that cooks from scratch.

Key Recommendations:

- Implement a complementary set of values-based procurement strategies that include:
  - — food seasonality;
  - — prioritizing organic when possible;
  - — identifying opportunities for local and regional purchasing;
  - — creating partnerships with values-driven wholesalers, distributors, and non-profit organizations;
  - — menu design that incorporates more affordable climate-friendly, plant-based sources of protein; and
  - — simple cost-effective strategies for reducing waste and improving offerings.

VI. CONCLUSION

As we grapple with rising rates of food insecurity and diet-related disease alongside massive racial inequities and environmental crises from climate change to biodiversity loss, it is time to rethink the role of school food service programs in our society. Schools are uniquely poised to invest in our children. As this report shows, when we invest in healthy, scratch-cooked, organically sourced, plant-forward school meals, not only do we invest in the health of California's children and future leaders, we can also deliver significant economic, environmental, and health benefits. Shifting a portion of California's 550 million school lunches toward Conscious Kitchen modelled purchasing would have a profound impact. This model generates myriad benefits: well-nourished children who are ready to learn; equitable access to healthier food; good food jobs; greenhouse gas emission reductions; water quality improvements; reduced use of toxic pesticides; stronger regional food sheds; and support for organic farmers and ranchers.

The success of the Conscious Kitchen model in these three schools sheds light on the challenges and opportunities for scaling a healthy, organic, climate-friendly school meal model statewide.

While we recognize that this model is unique and site-specific, the strategies discussed in this report can be applied and modified across diverse school food service settings throughout California. Building the political will to support these changes will take a broad dedicated movement working collectively across many sectors. As Jennifer Gaddis wrote in her book The Labor of Lunch:

"We need to organize a youth-led movement for school food justice. Universal free, healthy, tasty, eco-friendly, culturally appropriate school lunches could be a reality in the United States, but only if students, cafeteria workers (over 90 percent of whom are women), and communities join together in solidarity to fight for real food and real jobs in K-12 schools."[109]

From students and parents to nutrition service staff, non-profits, and organic food companies, leaders across California are working toward a vision for scratch-cooked, organic school meals that are healthy, climate-friendly, and delicious. Conscious Kitchen is one of many examples that show how any school community can work within its means to create healthy, positive change despite the many constraints and fast-food headwinds working against them. Together, we need to keep putting forward a larger vision for healthy and sustainable school food service that include organic ingredients, nourishing meals cooked from scratch with care, and proud employees earning a living wage. This is the sustainable vision we must build. With enough changemakers taking creative and courageous steps, we can overcome the entrenched, unhealthy fast-food culture and heavily subsidized, industrial meat and dairy industries. Nutritious and delicious school meals can and should be a key part of the recipe for repairing our environmental, justice, and public health crises.

APPENDIX

1. Background on the National School Lunch Program and Reimbursement

The National School Lunch Program (NSLP) is the nation's second-largest food and nutrition assistance program. It provides lunches for free, reduced price, or full-price lunch based on the income level of the student's family. The NSLP and other USDA child nutrition programs are a crucial source of food for students at risk of food insecurity and hunger.

History of School Lunch

The National School Lunch Program was established in 1946 as a means of decreasing surplus agricultural commodities and addressing child malnourishment and hunger.[110] The federal school meal program was shaped by progressive feminist and Black Power movements of the early and mid-20th century that inspired the concept of a school meal program that was safe, healthy, and accessible to all students (see Gaddis). But in the 1970's and 1980's, the U.S. Department of Agriculture (USDA) decreased school meal funding, particularly funds related to kitchen equipment and upgrades. These cuts forced schools to replace scratch cooking, full kitchen facilities, and publicly run food programs with privatized food service and heat-and-serve kitchens. These changes coincided with major cultural shifts toward industrial-style processed and pre-packaged convenience foods. These factors significantly depleted food quality in school meals (Rude, 2016). The nearly 100,000 schools enrolled in the National School Lunch Program receive federal reimbursements for meals served that meet nutritional guidelines.[111]

Students and their families complete a means test to receive wholly or partially subsidized meals. Students from families earning less than 130 percent of the federal poverty line are eligible for free school lunch. Students from families earning between 130 percent and 185 percent of the poverty line are eligible for reduced-price lunch, while all others must pay full price. In California, schools receive an additional state reimbursement for all meals served to eligible students.[112]

Each district sets its own prices for full and reduced lunch. Schools must track the number of free, reduced, and full-priced meals they serve that meet specific nutritional guidelines. These counts are submitted monthly, and the district receives a reimbursement for each meal. Districts that served free and reduced-price breakfasts to over 40 percent of students and free and reduced-price lunch to over 60 percent in the prior year are eligible for slightly higher reimbursements. In 2018-2019, the combined state and federal reimbursement for qualifying California schools was $3.57 per free meal, $2.38 per reduced-price, and $0.33 for full price meals.[113] Additional reimbursements are available for breakfasts, snacks, and suppers served in schools through various reimbursement programs.

2) Permitting, Procedures, and Equipment Needs for Scratch Cooking

When making changes to school kitchens, it is important to ensure that all city, state and federal permitting requirements are met.

- Health department permits: Contact the health department any time there are changes in the kitchen including, for example, when ordering a new oven, replacing a dishwasher, changing a water heater, or adding new equipment.
- California requirements: As a California school, everything you need to know to apply for the National School Lunch Program can be found on the California Department of Education website.[114]
- Federal requirements: All schools must meet all requirements of the NSLP.[115]
- ServSafe California certified: The ServSafe California certification is an online course that

- USDA school food service regulations: USDA runs and oversees the National School Lunch Program and has specific regulations and procedures for school food service that all who directly work with food should be trained on.[116]
- Electric and plumbing: All electrical circuits and plumbing capacities must be up to code, city permitting, and building requirements.

Equipment for scratch cooking

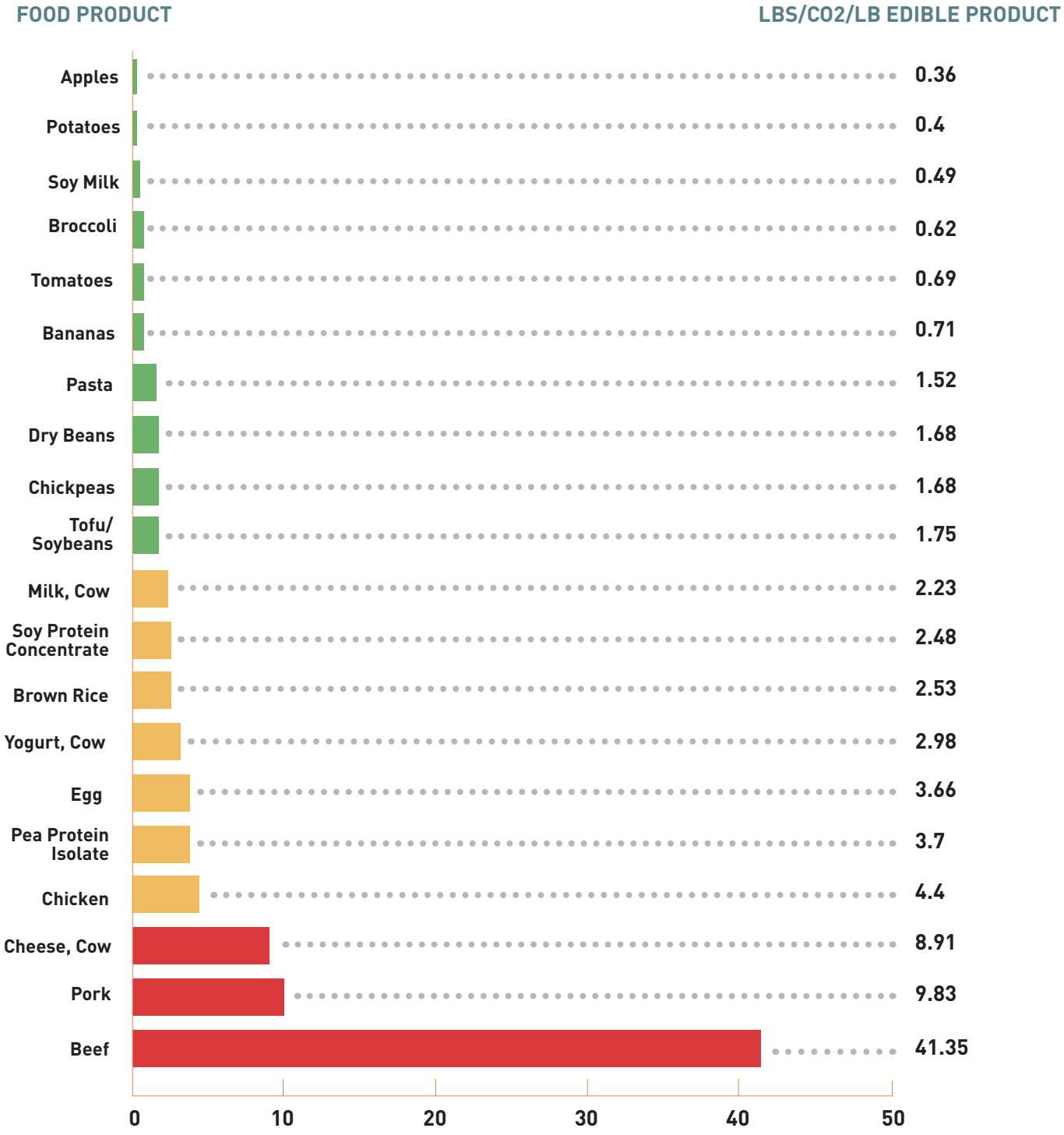
ESSENTIAL EQUIPMENT TO BEGIN:	— Grease trap — Hood (with fire suppression equipment over stoves) — Water temperature booseters — Three compartment sink — Prep sink — Handwashing sink
ESSENTIAL LARGE EQUIPMENT:	— Double door refrigerator — Double door freezer — Convection oven — Stock pot stove(s) and /or tilt — Hot box — Metro shelving storage — Speed rack(s) — Industrial dishwasher — Steam table — Ice machine — Milk machine — Work table(s)/casters — Prep table
ESSENTIAL EQUIPMENT FOR BULK COOKING:	— Flat top — Candy burner — Tilt skillet
SMALL EQUIPMENT:	— Robot Coupe food processor — Vitaprep blender — KitchenAid mixer — Immersion blender
SMALL WARES:	— Full hotel pans (2" / 4" / 6") — Hotel pan lids — Sheet trays — Mixing bowls — Cambro containers/lids — Cambro metro racks — Kitchen knives — (8"/ 10"/ bread/ paring/etc.) — Mason jars (1qt./ 2 qt.) — Chef spoons — Perforated chef spoons — Wooden spoons — Ice cream scoops — Peelers — Whisks — Spatulas — Measuring scoops (2 oz./4 oz./6 oz.) — Measuring cups/ spoons/ pitchers
COOKWARE:	— 10-gallon stock pots — 18-24" Rondeaux — 4 qt. Sauce pots — 10" Sauté pans
TABLEWARE (STAINLESS STEEL):	— Trays (elementary school) — Plates (middle school) — Bowls — Cups — Utensils

UNIFORM:	— Coats — Aprons
CLEANING SUPPLIES:	— Dishwasher soap — Dish towels — Dish rags — All-purpose soap — Hand soap — Non-chlorine bleach — Sponges — Stainless steel scrubber — Stainless steel scouring pad — Brooms — Dust pan — Recycle/Compost/ Landfill cans
UNIFORM:	— Coats — Aprons

Estimated investment in small equipment for kitchen upgrades

SMALL EQUIPMENT: - Vitaprep - Food processor - Immersion blenders, etc.	$4,000
COOKWARE:	$3,500
SMALL WARES:	$3,000
SERVEWARE: TRAYS, BOWLS, CUPS, UTENSILS:	$12,000

3) Greenhouse Gas Emissions of Select Foods



Source: Poor and Nemecek (2018). Reducing food's environamental impacts through producers and consumers. Science, 01 Jun, 2018: Vol. 360, Issue 6392, pp. 987-992.

SOURCES

1 Garg, Shika et al. "Hospitalization Rates and Characteristics of Patients Hospitalized with Laboratory-Confirmed Coronavirus Disease 2019 – COVID-NET, 14 States, March 1-30, 2020." Morbidity and Mortality Weekly Report, 69, no. 15 (2020): 458-464. DOI: http://dx.doi.org/10.15585/mmwr.mm6915e3.

2 Centers for Disease Control. "Childhood Obesity Facts." Last modified June 24, 2019. https://www.cdc.gov/obesity/data/childhood.html

3 Conway, Baqiyyah N. et al. "The Obesity Epidemic and Rising Diabetes Incidence in a Low-Income Racially Diverse Southern US Cohort." PLOS ONE 13, no. 1 (January 11, 2018). https://doi.org/10.1371/journal.pone.0190993.

4 Hyland, Carly et al. "Organic diet intervention significantly reduces urinary pesticide levels in U.S. children and adults." Environmental Research, 171(April 2019): 568–575. https://doi.org/10.1016/j.envres.2019.01.024. Misiewicz, Tracy and Jessica Shade. "Reducing occupational pesticide exposure in farmers and farmworkers." The Organic Center, September 2018. https://www.organic-center.org/organic-agriculture-reducing-occupational-pesticide-exposure-farmers-and-farmworkers

5 Benador, Laetitia, Kelly Damewood, and Jane Sooby. "Roadmap to an organic California: Benefits Report." California Certified Organic Farmers Foundation, 2019. https://www.ccof.org/roadmap-organic-california

6 Finley, Lynn, M. et al. "Does organic farming present greater opportunities for employment and community development than conventional farming? A survey-based investigation in California and Washington." Agroecoogical and Sustainable Food Systems, 42, no. 5 (2018): 552-572. https://doi.org/10.1080/21683565.2017.1394416 ;Marasteanu, I. Julia and Jaenicke, Edward. C. "The role of US organic certifiers in organic hotspot formation." Renewable Agriculture and Food Systems: 31 (2016): 230–245.

7 Hamerschlag, Kari and Kraus-Polk, Julian. "Shrinking the Carbon and Water Footprint of School Food." Friends of the Earth, 2017. https://foe.org/resources/shrinking-carbon-water-footprint-school-food/

8 Melina, Vesanto, Winston Craig, Susan Levin. "Position of the Academy of Nutrition and Dietetics: Vegetarian Diets." Journal of the Academy of Nutrition and Dietetics 116, no. 12 (2016): 1970-1980. https://doi.org/10.1016/j.jand.2016.09.025 ; "Menus of Change." Culinary Institute of America & Harvard T.H. Chan School of Public Health, 2016. https://www.menusofchange.org/images/uploads/pdf/CIA-Harvard_2016MenusOfChangeAnnualReport.pdf

9 Hamerschlag, Kari. "California Budget Boosts Healthy Food for Kids and Markets for Farmers." FoodTank, January 2020. https://foodtank.com/news/2020/01/opinion-a-key-step-in-creating-a-new-school-food-paradigm/

10 Johnson, Allison and Lena Brook. "California Could Be the First Organic-to-School State." NRDC Expert Blog, February 21, 2019. https://www.nrdc.org/experts/allison-johnson/california-could-be-first-organic-school-state; "California Senate Education Committee Approves Nation's First Climate-Friendly Plant-Based School Lunch Program." Friends of the Earth, July 3, 2019. https://foe.org/news/california-senate-education-committee-approves-nations-first-climate-friendly-plant-based-school-lunch-program/; California Legislative Information. "AB-2949 School meals: nutritional requirements." May 1, 2020. http://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201920200AB2949

11 "2009-2012 Farm Bill Spending (actual) on Fruits, Nuts and Vegetables: Woefully Inadequate to Address US Consumption Deficits." Environmental Working Group, 2012. https://static.ewg.org/reports/2012/Specialty-Crop-Grants-in-California/2-2009-2012-Farm-Bill-Spending-actual-on-Fruits-Nuts-and-Vegetables-Woefully-Inadequate-to-Address-US-Consumption-Deficits.pdf

12 School Nutrition Association. "School Meal Trends & Stats." Accessed May 14, 2020, https://schoolnutrition.org/aboutschoolmeals/schoolmealtrendsstats/. "Food Programs: Annual Child Nutrition Programs Participation Data." California Department of Education,

13 Gaddis, Jennifer. The Labor of Lunch: Why We Need Real Food and Real Jobs in American Public Schools. Oakland, California: University of California Press, 2019.

14 Mlilo, Miranda and Chloë Waterman. "Healthier school food is key to fighting COVID-19 and systemic racism." Medium: Friends of the Earth, July 15, 2020. https://medium.com/@foe_us/healthier-school-food-is-key-to-fighting-covid-19-and-systemic-racism-16f5a2dcc10d

15 Min, Stephanie. "USDA Extends Free Meals for Children Until End of 2020 – 2021 School Year." FoodTank, October 2020. https://foodtank.com/news/2020/10/usda-extends-free-meals-for-children-until-end-of-2020-2021-school-year/

16 Garg, Shika et al. "Hospitalization Rates and Characteristics of Patients Hospitalized with Laboratory-Confirmed Coronavirus Disease 2019 – COVID-NET, 14 States, March 1-30, 2020." Morbidity and Mortality Weekly Report, 69, no. 15 (2020): 458-464. DOI: http://dx.doi.org/10.15585/mmwr.mm6915e3.

17 Centers for Disease Control. "Childhood Obesity Facts." Last modified June 24, 2019. https://www.cdc.gov/obesity/data/childhood.html

18 Olshansky, S. Jay et al. "A Potential Decline in Life Expectancy in the United States in the 21st Century." The New England Journal of Medicine 352, no. 11 (March 17, 2005): 1138–1145. https://doi.org/10.1056/NEJMsr043743.

19 Belluck, Pam. "Children's Life Expectancy Being Cut Short by Obesity." The New York Times, March 17, 2005. https://www.nytimes.com/2005/03/17/health/childrens-life-expectancy-being-cut-short-by-obesity.html.

20 Conway, Baqiyyah N. et al. "The Obesity Epidemic and Rising Diabetes Incidence in a Low-Income Racially Diverse Southern US Cohort." PLOS ONE 13, no. 1 (January 11, 2018). https://doi.org/10.1371/journal.pone.0190993.

21 Centers for Disease Control. "Nutrition, Physical Activity, and Obesity: Data, Trends, and Maps." Last updated July 8, 2020. https://www.cdc.gov/nccdphp/dnpao/data-trends-maps/index.html. See especially: explore by location tool.

22 "Find data about the health and well being of kids in communities across California." Kidsdata.org, accessed November 9, 2020. https://www.kidsdata.org

23 Centers for Disease Control. "Childhood Obesity Causes & Consequences." Last updated September 2, 2020. https://www.cdc.gov/obesity/childhood/causes.html

24 McCarthy, Claire. "Common Food Additives and Chemicals Harmful to Children," Harvard Health Blog, July 24, 2018. https://www.health.harvard.edu/blog/common-food-additives-and-chemicals-harmful-to-children-2018072414326.

25 "Processed Foods and Health." The Nutrition Source, accessed May 14, 2020. https://www.hsph.harvard.edu/nutritionsource/processed-foods/.

26 Centers for Disease Control. "Children Eating More Fruit, but Fruit and Vegetable Intake Still Too Low." Last updated June 5, 2019. https://www.cdc.gov/nccdphp/dnpao/division-information/media-tools/dpk/vs-fruits-vegetables/index.html.

27 Slone, Latesa. "Over 70 Percent of California Adolescents Are Not Eating Enough Fruits and Vegetables." Let's Get Healthy California, accessed May 15, 2020. https://letsgethealthy.ca.gov/goals/healthy-beginnings/healthy-diet-adolescent-fruit-and-vegetable-consumption/.

28 Insert FoE Brief when it is ready

29 International Agency for Research on Cancer. "Volume 114: Consumption of red meat and processed meat." IARC Working Group, 2015. http://dx.doi.org/10.1016/S1470-2045(15)00444-1

30 FoE Brief – see footnote 17 above.

31 U.S Department of Health and Human Services and U.S Department of Agriculture. "2015-2020 Dietary Guidelines for Americans: 8th Edition." December 2015. https://health.gov/our-work/food-nutrition/2015-2020-dietary-guidelines/guidelines/

32 Reinhardt, Sarah and Kranti Mulik. "Purchasing Power: How Institutional 'Good Food' Procurement Policies Can Shape a Food System That's Better for People and Our Planet." Union of Concerned Scientists, November 2017. https://www.ucsusa.org/sites/default/files/attach/2017/11/purchasing-power-report-ucs-2017.pdf.

33 U.S. Bureau of Labor Statistics. 2019. 35-2012 Cooks, Institution and Cafeteria. https://www.bls.gov/oes/current/oes352012.htm

34 Jacobs, Ken and Dave Graham-Squire, "Labor Standards for School Cafeteria Workers, Turnover and Public Program Utilization," Berkeley Journal of Employment and Labor Law 31, no. 2 (2010): 447–458.

35 Gaddis, Jennifer. "How to Fight for Justice in Your School Cafeteria." Teen Vogue, November 13, 2019. https://www.teenvogue.com/story/school-lunch-history-justice.

36 Food Chain Workers Alliance and Solidarity Research Collective. "No Piece of the Pie: US Food Workers in 2016." Food Chain Workers Alliance, November 2016. http://foodchainworkers.org/wp-content/uploads/2011/05/FCWA_NoPieceOfThePie_P.pdf.

37 Centers for Disease Control. "National Report on Human Exposure to Environmental Chemicals." January 2019, https://www.cdc.gov/exposurereport/index.html.

38 Roberts, James R., Catherine J. Karr, and Council On Environmental Health. "Pesticide Exposure in Children." Pediatrics 130, no. 6 (December 2012). https://doi.org/10.1542/peds.2012-2758.

39 Bassil, K.L. et al. "Cancer Health Effects of Pesticides: Systematic Review." Canadian Family Physician Medecin De Famille Canadien 53, no. 10 (October 2007): 1704–1711; Alavanja, Michael C. R., Jane A. Hoppin, and Freya Kamel. "Health Effects of Chronic Pesticide Exposure: Cancer and Neurotoxicity." Annual Review of Public Health 25 (2004): 155–197. https://doi.org/10.1146/annurev.publhealth.25.101802.123020; Brenda Eskenazi et al. "Organophosphate Pesticide Exposure and Neurodevelopment in Young Mexican-American Children." Environmental Health Perspectives 115, no. 5 (May 2007): 792–798. https://doi.org/10.1289/ehp.9828.

40 Harriott, Nichelle and Jay Feldman. "Pesticides That Disrupt Endocrine System Still Unregulated by EPA." Beyond Pesticides, n.d. https://www.beyondpesticides.org/assets/media/documents/gateway/health%20effects/endocrine%20cited.pdf.

41 Vigar, Vanessa et al. "A Systematic Review of Organic Versus Conventional Food Consumption: Is There a Measurable Benefit on Human Health?" Nutrients, 12, no. 1 (January 2020). https://doi.org/10.3390/nu12010007

42 Roberts, Karr, and Council On Environmental Health. "Pesticide Exposure in Children."

43 Leah Grout et al. "A Review of Potential Public Health Impacts Associated With the Global Dairy Sector." GeoHealth 4, no. 2 (2020). https://doi.org/10.1029/2019GH000213.

44 Hamerschlag, Kari. "Meat Eater's Guide to Climate Change and Health." Environmental Working Group, July 2011. http://static.ewg.org/reports/2011/meateaters/pdf/report_ewg_meat_eaters_guide_to_health_and_climate_2011.pdf.

45 Smith, Pete et al. "Climate Change Cannot Be Entirely Responsible for Soil Carbon Loss Observed in England and Wales, 1978–2003." Global Change Biology 13, no. 12 (2007): 2605–2609. https://doi.org/10.1111/j.1365-2486.2007.01458.x; Cerdà, Artemi et al. "Soil Erosion and Agriculture." Soil & Tillage Research 106 (December 1, 2009): 107–108. https://doi.org/10.1016/j.still.2009.10.006.

46 "Stories and Successes." Good Food Purchasing Program, accessed November 10, 2020. https://goodfoodpurchasing.org/stories/

47 "Beyond Green: Sustainable Food Partners." Beyond Green, accessed November 10, 2020. https://beyondgreenpartners.com/

48 "Get Schools Cooking." Chef Ann Foundation, accessed November 10, 2020. https://www.chefannfoundation.org/what-we-do/get-schools-cooking

49 "Homepage." Community Alliance with Family Farmers, accessed November 10, 2020. https://www.caff.org/ ; "Homepage." Sierra Harvest, accessed November 10, 2020. https://sierraharvest.org/

50 "Homepage." Healthy Day, accessed November 10, 2020. https://www.healthydaypartners.org/

51 "School Profile - Bayside Martin Luther King Jr. Academy." Ed-Data, accessed May 15, 2020. https://www.ed-data.org/school/Marin/Sausalito-Marin-City/Bayside-Martin-Luther-King-Jr_Dot_-Academy.

52 Vincent, Jeffrey M. et al. "Are California Public Schools Scratch-Cooking Ready? A survey of food service directors on the state of school kitchens." UC Berkeley Center for Cities + Schools, November 10, 2020. https://citiesandschools.berkeley.edu/publications?pubId=recXU9UeAxXOLE7UZ

53 The Pew Charitable Trusts and Robert Wood Johnson Foundation. "Serving Healthy School Meals." December 2013. https://schoolnutrition.org/uploadedFiles/Resources_and_Research/Research/KITSEquipmentReport.pdf.

54 Gaddis, "How to Fight for Justice in Your School Cafeteria."

55 The Girl Effect. Accessed May 27, 2020. https://www.youtube.com/watch?v=WIvmE4_KMNw.

56 Oddy, Wendy H. et al. "The Association between Dietary Patterns and Mental Health in Early Adolescence." Preventive Medicine 49, no. 1 (August 2009): 39–44. https://doi.org/10.1016/j.ypmed.2009.05.009; "About The Buzz: Children Who Eat Processed Foods Have Behavioral Problems And Lower IQ's?," Have A Plant, accessed May 14, 2020. https://fruitsandveggies.org/stories/atb-for-030211/.

57 Shimada, Tia. "Breakfast After the Bell Research Overview." California Food Policy Advocates, 2016. https://cfpa.net/ChildNutrition/SBP/Legislation/BAB-ResearchOverview-2016.pdf.

58 Fox, Mary Kay and Elizabeth Gearan. "School Nutrition and Meal Cost Study: Summary of Findings." USDA Food and Nutrition Service, April 2019.

59 Shimada, Tia. "School Meal Access & Participation California Statewide Summary: 2015-16." California Food Policy Advocates, June 19, 2017.

60 Hamerschlag, Kari, Jen Dalton, and Julian Kraus-Polk. "Scaling Up Healthy, Climate-Friendly School Food." Friends of the Earth, September 2018. https://foe.org/wp-content/uploads/2018/09/Climate-Friendly-Food_Full-Report.pdf.

61 Brown, Amy and Janna Bilski. "Fighting the Stigma of Free Lunch: Why Universal Free School Lunch Is Good for Students, Schools, and Families." Ford Foundation, September 29, 2017. https://www.fordfoundation.org/ideas/equals-change-blog/posts/fighting-the-stigma-of-free-lunch-why-universal-free-school-lunch-is-good-for-students-schools-and-families/; Abdouramane, Aminata. "First Person: How the Shame of 'free-free' Inspired My Push for Universal Free Lunch." Chalkbeat, April 27, 2016. https://ny.chalkbeat.org/2016/4/27/21098156/first-person-how-the-shame-of-free-free-inspired-my-push-for-universal-free-lunch.

62 Rienks, Jennifer. "A Case for Organic, Scratch-Cooked School Meal Programs." In Press.

63 Ugarte, Ashley et al. "Conscious Kitchen Cookbook: A Guide to Conscious Eating." n.d. http://turninggreen.org/wp-content/uploads/2016/10/CK_COOKBOOK-v4.pdf

64 Gaddis, The Labor of Lunch.

65 Benador, Laetitia, Kelly Damewood, and Jane Sooby. "Roadmap to an organic California: Benefits Report." California Certified Organic Farmers Foundation, 2019. https://www.ccof.org/roadmap-organic-california

66 Benador, Damewood, and Scooby, "Roadmap to an organic California: Benefits Report."

67 Christensen, Libby O. et al. "Economic Impacts of Farm to School." National Farm to School Network, September 2017. http://www.farmtoschool.org/Resources/EconomicImpactReport.pdf.

68 "Genetic Engineering Archives," Friends of the Earth, accessed May 15, 2020. https://foe.org/projects/genetic-engineering/; Benador, Damewood, and Scooby, "Roadmap to an Organic California: Benefits Report."

69 Hyland, Carly et al. "Organic diet intervention significantly reduces urinary pesticide levels in U.S. children and adults." Environmental Research, 171 (April 2019): 568–575. https://doi.org/10.1016/j.envres.2019.01.024.; Fagan, John et al. "Organic diet intervention significantly reduces urinary glyphosate levels in U.S. children and adults." Environmental Research, 189 (October 2020). https://doi.org/10.1016/j.envres.2020.109898
70 Misiewicz, Tracy and Jessica Shade. "Reducing occupational pesticide exposure in farmers and farmworkers." The Organic Center, September 2018. https://www.organic-center.org/organic-agriculture-reducing-occupational-pesticide-exposure-farmers-and-farmworkers
71 Misiewicz and Shade, "Reducing occupation pesticide exposure."
72 Hoelzer, Karin. "Link reaffirmed between antibiotic use in animal agriculture and the public health risk." Pew Charitable Trusts, July 11, 2017. https://www.pewtrusts.org/en/research-and-analysis/articles/2017/07/11/link-reaffirmed-between-antibiotic-use-in-animal-agriculture-and-the-public-health-risk
73 Sapkota, Amy R. et al. "Lower Prevalence of Antibiotic-Resistant Enterococci on U.S. Conventional Poultry Farms That Transitioned to Organic Practices." Environmental Health Perspectives 119, no. 11 (November 2011): 1622–1628. https://doi.org/10.1289/ehp.1003350; Kilonzo-Nthenge, A. et al. "Occurrence and Antimicrobial Resistance of Enterococci Isolated from Organic and Conventional Retail Chicken." Journal of Food Protection 78, no. 4 (April 1, 2015): 760–766. https://doi.org/10.4315/0362-028X.JFP-14-322; Schwaiger, K, Schmied, E.-M. V. and Bauer, J. "Comparative Analysis on Antibiotic Resistance Characteristics of Listeria Spp. and Enterococcus Spp. Isolated from Laying Hens and Eggs in Conventional and Organic Keeping Systems in Bavaria, Germany." Zoonoses and Public Health 57, no. 3 (May 2010): 171–180. https://doi.org/10.1111/j.1863-2378.2008.01229.x.
74 Welsh, Jean A. et al. "Production-Related Contaminants (Pesticides, Antibiotics and Hormones) in Organic and Conventionally Produced Milk Samples Sold in the USA." Public Health Nutrition 22, no. 16 (2019): 2972–2980. https://doi.org/10.1017/S136898001900106X.
75 Barański, Marcin et al. "Higher Antioxidant and Lower Cadmium Concentrations and Lower Incidence of Pesticide Residues in Organically Grown Crops: A Systematic Literature Review and Meta-Analyses." The British Journal of Nutrition 112, no. 5 (September 14, 2014): 794–811, https://doi.org/10.1017/S0007114514001366.
76 Palupi, Eny et al. "Comparison of Nutritional Quality between Conventional and Organic Dairy Products: A Meta-Analysis." Journal of the Science of Food and Agriculture 92, no. 14 (November 2012): 2774–2781. https://doi.org/10.1002/jsfa.5639; Rinehart, Lee and Ann Baier. "Pasture for Organic Ruminant Livestock: Understanding and Implementing the National Organic Program (NOP) Pasture Rule." National Center for Appropriate Technology: ATTRA, May 2011. https://attra.ncat.org/product/pasture-for-organic-ruminant-livestock-understanding-and-implementing-the-national-organic-program-nop-pasture-rule/; Średnicka-Tober, Dominika et al. "Higher PUFA and N-3 PUFA, Conjugated Linoleic Acid, α-Tocopherol and Iron, but Lower Iodine and Selenium Concentrations in Organic Milk: A Systematic Literature Review and Meta- and Redundancy Analyses." The British Journal of Nutrition 115, no. 6 (March 28, 2016): 1043–1060. https://doi.org/10.1017/S0007114516000349.
77 Lund University. "Organic Farming Methods Favors Pollinators." Science Daily, September 14, 2018. https://www.sciencedaily.com/releases/2018/09/180914100327.htm; "Organic Farms Support More Species." University of Oxford, February 4, 2014. http://www.ox.ac.uk/news/2014-02-04-organic-farms-support-more-species.
78 Gattinger, Andreas et al. "Enhanced Top Soil Carbon Stocks under Organic Farming." Proceedings of the National Academy of Sciences 109, no. 44 (October 30, 2012). https://doi.org/10.1073/pnas.1209429109; Ghabbour, Elham et al. "National Comparison of the Total and Sequestered Organic Matter Contents of Conventional and Organic Farm Soils." Advances in Agronomy, 146 (2017). https://doi.org/10.1016/bs.agron.2017.07.003; "Agriculture and Energy Consumption." FoodPrint, accessed May 15, 2020. https://foodprint.org/issues/agriculture-energy-consumption/; Niles, Meredith. "Sustainable Soils: Reducing, Mitigating, and Adapting to Climate Change with Organic Agriculture." Sustainable Development Law & Policy 9, no. 1 (Fall 2008).
79 Lotter, D. W., R. Seidel, and W. Liebhardt. "The Performance of Organic and Conventional Cropping Systems in an Extreme Climate Year." American Journal of Alternative Agriculture 18, no. 3 (September 2003): 146–154. https://doi.org/10.1079/AJAA200345; Borron, Sarah. "Building Resilience for an Unpredictable Future: How Organic Agriculture Can Help Farmers Adapt to Climate Change." Food and Agriculture Organization of the United Nations, 2006. http://www.fao.org/publications/card/en/c/d736bbbe-d445-5f32-bfb0-1f7dec3d5530/.
80 Finley, Lynn et al. "Does Organic Farming Present Greater Opportunities for Employment and Community Development than Conventional Farming? A Survey-Based Investigation in California and Washington." Agroecology and Sustainable Food Systems 42, no. 5 (May 28, 2018): 552–572. https://doi.org/10.1080/21683565.2017.1394416.
81 Marasteanu, I. Julia and Edward C. Jaenicke. "The Role of US Organic Certifiers in Organic Hotspot Formation." Renewable Agriculture and Food Systems 31, no. 3 (June 2016): 230–245. https://doi.org/10.1017/S1742170515000149.
82 "Menus of Change." Culinary Institute of America & Harvard T.H. Chan School of Public Health, 2016. https://www.menusofchange.org/images/uploads/pdf/CIA-Harvard_2016MenusOfChangeAnnualReport.pdf.
83 Hamerschlag, Kari and Kraus-Polk, Julian. "Shrinking the Carbon and Water Footprint of School Food." Friends of the Earth, 2017. https://foe.org/resources/shrinking-carbon-water-footprint-school-food/
84 Hamerschlag, Dalton, and Kraus-Polk, "Scaling Up Healthy, Climate-Friendly School Food."
85 "2015-2020 Dietary Guidelines." U.S. Department of Health and Human Services and U.S. Department of Agriculture, 2015. https://health.gov/our-work/food-nutrition/2015-2020-dietary-guidelines.
86 Cross, Amanda J. et al. "A Prospective Study of Red and Processed Meat Intake in Relation to Cancer Risk." PLoS Medicine 4, no. 12 (December 2007). https://doi.org/10.1371/journal.pmed.0040325.
87 Springmann, Marco et al. "Analysis and Valuation of the Health and Climate Change Cobenefits of Dietary Change." Proceedings of the National Academy of Sciences 113, no. 15 (April 12, 2016): 4146–4151. https://doi.org/10.1073/pnas.1523119113; Willett, Walter C. and Meir J. Stampfer. "Current Evidence on Healthy Eating." Annual Review of Public Health 34, no. 1 (2013): 77–95. https://doi.org/10.1146/annurev-publhealth-031811-124646.
88 "Dioxins and Their Effects on Human Health." World Health Organization, October 4, 2016. https://www.who.int/news-room/fact-sheets/detail/dioxins-and-their-effects-on-human-health.
89 Institute of Medicine. "Policy Options to Reduce Exposure to Dioxins and Dioxin-like Compounds." In Dioxins and Dioxin-like Compounds in the Food Supply: Strategies to Decrease Exposure, 174-201. Washington, D.C.: The National Academies Press, 2003. https://www.ncbi.nlm.nih.gov/books/NBK221711/.
90 Martin, Michael J., Sapna E Thottathil, and Thomas B. Newman. "Antibiotics Overuse in Animal Agriculture: A Call to Action for Health Care Providers." American Journal of Public Health 105, no. 12 (December 2015): 2409–2410. https://doi.org/10.2105/AJPH.2015.302870.
91 Nordgren, Tara M. and Kristina L. Bailey. "Pulmonary Health Effects of Agriculture." Current Opinion in Pulmonary Medicine 22, no. 2 (March 2016): 144–149. https://doi.org/10.1097/MCP.0000000000000247; May, Sara, Debra J. Romberger, and Jill A. Poole. "Respiratory Health Effects of Large Animal Farming Environments." Journal of Toxicology and Environmental Health. Part B, Critical Reviews 15, no. 8 (2012): 524–541. https://doi.org/10.1080/10937404.2012.744288.
92 "Key Facts and Findings: GHG Emissions by Livestock." Food and Agriculture Organization of the United Nations, accessed May 15, 2020. http://www.fao.org/news/story/en/item/197623/icode/.
93 Mekonnen, M.M. and A.Y. Hoekstra. "The Green, Blue and Grey Water Footprint of Farm Animals and Animal Products." UNESCO-IHE Institute for Water Education, December 2010. https://www.waterfootprint.org/media/downloads/Report-48-WaterFootprint-AnimalProducts-Vol1.pdf.

94 Hamerschlag, "Meat Eater's Guide to Climate Change and Health."

95 Deaton, Jeremy. "Methane Levels Reach an All-Time High." Scientific American, April 12, 2020. https://www.scientificamerican.com/article/methane-levels-reach-an-all-time-high/

96 "Fight Climate Change by Preventing Food Waste." World Wildlife Fund, accessed June 18, 2020. https://www.worldwildlife.org/stories/fight-climate-change-by-preventing-food-waste.

97 Shimada, "Breakfast After the Bell Research Overview."; Robinson-O'Brien, Ramona et al. "Associations between School Meals Offered through the National School Lunch Program and the School Breakfast Program and Fruit and Vegetable Intake among Ethnically Diverse, Low-Income Children." The Journal of School Health 80, no. 10 (October 2010): 487–492. https://doi.org/10.1111/j.1746-1561.2010.00532.x; Johnston, Craig A. et al. "School Lunches and Lunches Brought from Home: A Comparative Analysis." Childhood Obesity 8, no. 4 (August 2012): 364–368. https://doi.org/10.1089/chi.2012.0012; Cohen, Juliana F. W. et al. "Impact of the New U.S. Department of Agriculture School Meal Standards on Food Selection, Consumption, and Waste." American Journal of Preventive Medicine 46, no. 4 (April 2014): 388–394. https://doi.org/10.1016/j.amepre.2013.11.013.

98 "Food Education Fast Facts." Laurie M. Tisch Center for Food, Education & Policy, n.d. https://www.tc.columbia.edu/media/centers/tisch/briefs-pdfs/Food-Education-Fast-Facts-FINAL.pdf

99 School Nutrition Association, "School Meal Trends & Stats."

100 School Nutrition Association, "School Meal Trends & Stats."

101 "2018-19 CNP Reimbursement Rates - Rates, Eligibility Scales, & Funding." California Department of Education, accessed May 15, 2020. https://www.cde.ca.gov/ls/nu/rs/rates1819.asp.

102 "School Nutrition and Meal Cost Study: Summary of Findings." USDA Food and Nutrition Service, April 2019. https://fns-prod.azureedge.net/sites/default/files/resource-files/SNMCS_Summary-Findings.pdf

103 School Nutrition Association, "School Meal Trends & Stats."

104 Abdouramane, "First Person."; Brown and Bilski, "Fighting the Stigma of Free Lunch."

105 Rienks, "A Case for Organic, Scratch-Cooked School Meal Programs."

106 Hamerschlag, Kari. "California Budget Boosts Healthy Food for Kids and Markets for Farmers." FoodTank, January 2020. https://foodtank.com/news/2020/01/opinion-a-key-step-in-creating-a-new-school-food-paradigm/

107 Johnson, Allison and Lena Brook. "California Could Be the First Organic-to-School State." NRDC Expert Blog, February 21, 2019. https://www.nrdc.org/experts/allison-johnson/california-could-be-first-organic-school-state; "California Senate Education Committee Approves Nation's First Climate-Friendly Plant-Based School Lunch Program." Friends of the Earth, July 3, 2019. https://foe.org/news/california-senate-education-committee-approves-nations-first-climate-friendly-plant-based-school-lunch-program/; California Legislative Information. "AB-2949 School meals: nutritional requirements." May 1, 2020. http://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201920200AB2949

108 "2009-2012 Farm Bill Spending (actual) on Fruits, Nuts and Vegetables: Woefully Inadequate to Address US Consumption Defecits." Environmental Working Group, 2012. https://static.ewg.org/reports/2012/Specialty-Crop-Grants-in-California/2-2009-2012-Farm-Bill-Spending-actual-on-Fruits-Nuts-and-Vegetables-Woefully-Inadequate-to-Address-US-Consumption-Deficits.pdf

109 Gaddis, The Labor of Lunch.

110 Ruis, A.R. Eating to Learn, Learning to Eat: The Origins of School Lunch in the United States. New Brunswick: Rutgers University Press, 2017.

111 "National School Lunch Program." California Department of Education, accessed May 15, 2020. https://www.cde.ca.gov/ls/nu/sn/nslp.asp.

112 Shimada, "School Meal Access & Participation California Statewide Summary: 2015-16."

113 "2018-19 CNP Reimbursement Rates - Rates, Eligibility Scales, & Funding."

114 "California Department of Education." Accessed November 10, 2020. https://www.cde.ca.gov/

115 "National School Lunch Program." USDA, accessed November 10, 2020. https://www.fns.usda.gov/nslp

116 "Program Legislation & Regulations." USDA, accessed November 10, 2020. https://www.fns.usda.gov/cn/program-legislation-regulations