

**SUSTAINABLE
FOOD AND
CHILDHOOD
OBESITY**

**ASPEN
DESIGN SUMMIT**

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INITIATIVE

A small but broad based revolution is taking place in the food system in the U.S., leading to a fundamental rethinking of how we produce, process, prepare, distribute and consume food. While industrialized agriculture has made more food available to us than ever before, it has come at a great cost to our health, our environment and to traditional farming methods. Among the tragic consequences to personal health is an obesity epidemic — especially among children — as well as high rates of diet-related disease and food safety crises. Reversing these effects by supporting the emergent and alternative, sustainable system of food production, distribution, and consumption is one of the core challenges of our time.

More than ever before, we are talking about our food, its origins and nutritional value, and how it is grown and delivered to our tables. Consider the success of books about food and the food industry by Michael Pollan and Eric Schlosser, as well as the Slow Food movement and a host of grass roots initiatives — from Michelle Obama's organic White House garden to Community Sustainable Agriculture and the school lunch revolution. They all suggest that the time has come to redesign our relationship with food.

Despite these promising initiatives, the fact remains that sustainable food innovations are subscale and dwarfed by the \$1.4 trillion U.S. food industry. Yet with an estimated 25 million children now classified as overweight or obese and the cost of obesity-related health issues costing \$117 billion way back in 2000, we can no longer afford the status quo.

The conversation around sustainable food innovations is moving beyond epicurean enthusiasts and into healthcare and public policy debates. One pathway into this complex and vast issue is through the urgent and rapidly rising epidemic of childhood obesity

— a paradoxical epidemic in which an abundance of (high caloric) food can lead to nutritional deficiencies. The connections between the breakdowns in our food system, the health of our children, and the costs of healthcare are readily apparent —and offer opportunities for impact.

The goal of the Food Project at Aspen is to identify where design interventions might change the pace, degree, or scale of food transformations already underway in order to impact the childhood obesity epidemic. We want to identify aspects of the food system — from production to distribution, retail to consumption — where we can tip the momentum for change and make it unstoppable.

BACKGROUND

More than one-third of children in the United States are overweight or obese, a fact that could mean they become the first generation in recent history to have shorter life spans than their parents. As the *Washington Post* noted in a 2008 series on the problem, “an epidemic of obesity is compromising the lives of millions of American children, with burgeoning problems that reveal how much more vulnerable young bodies are to the toxic effects of fat.”

Doctors are seeing confirmation of this daily: boys and girls in elementary school suffering from high blood pressure, high cholesterol and painful joint conditions; a soaring incidence of type 2 diabetes, once a rarity in pediatricians' offices; even a spike in child gallstones, also once a singularly adult affliction. Minority youth are most severely affected, because so many are pushing the scales into the most dangerous territory.

The problem is particularly dire for those ages 6 to 19, the *Post* report explains. For this age group, the rate of obesity has not just doubled, as with their parents and grandparents, but has more than tripled.

What's more, it's unlikely that many will never recover from being overweight: up to 80 percent of obese teens become obese adults, leading experts to predict an exponential increase in heart disease, strokes, cancer and other health problems as the children move into their 20s and beyond.

The epidemic is expected to add billions of dollars to the U.S. health-care bill. Treating a child with obesity is three times more costly than treating the average child, according to a study by Thomson Reuters. The research company pegged the country's overall expense of care for overweight youth at \$14 billion annually. A substantial portion is for hospital services, since those patients go more frequently to the emergency room and are two to three times more likely to be admitted.

These facts, reported by the *Post* are based on wide ranging sources:

- 1.** The average 10-year-old girl weighed 77 pounds in 1963; today, 88. The 10-year-old boy weighed 74; today, 85.
- 2.** A 2006 study tracking 2,000 low-income children in 20 cities found that a third were overweight or obese before age 4. Most at risk: Hispanics.
- 3.** Even more than smoking or drinking, obesity triggers significant health problems and pushes up health spending.
- 4.** Children and teens consumed 110 to 165 more calories than they burned each day over a 10-year period, adding up to 58 pounds of extra weight, according to a Harvard University study.
- 5.** Only 2 percent of U.S. children eat a healthy diet as defined by the USDA.
- 6.** "Husky" car seats were developed several years ago. In 2006, more than 250,000

children under 6 exceeded the weight standards for regular seats.

7. Soft-drink consumption has increased 300 percent in 20 years, and is the leading source of added sugars for adolescents.

8. One-fourth of all vegetables eaten in the U.S. are french fries or chips.

9. One-fourth of all Americans eat fast food at least once a day.

10. We consume 20 percent more calories than a generation ago; most comes from fats and oils (up 63 percent), grains (up 43 percent), sugar (up 19 percent).

The problem begins in-utero (obese mothers usually have obese children). But that's just part of the complex causes of obesity, the *Post* says. Patterns of eating and activity, often set during early childhood, are influenced by government and education policies, cultural factors and environmental changes. Income and ethnicity are implicated, though these days virtually every community has a problem.

Author Michael Pollan, whose recent books about food have been bestsellers, believes that the agricultural-industrial complex, which, with the support of government food policies and subsidies, spits out processed food with low nutritional value, is a major cause of the obesity epidemic. The government, he wrote in a recent *New York Times* op-ed piece, "is poised to go on encouraging America's fast-food diet with its farm policies even as it takes on added responsibilities for covering the medical costs of that diet. To put it more bluntly, the government is putting itself in the uncomfortable position of subsidizing both the costs of treating Type 2 diabetes and the consumption of high-fructose corn syrup."

Pollan adds, “Cheap food is going to be popular as long as the social and environmental costs of that food are charged to the future. There’s lots of money to be made selling fast food and then treating the diseases that fast food causes. One of the leading products of the American food industry has become patients for the American health care industry.”

In general, Pollan blames Washington and Wall Street, which he alleges set the rules of the game. But he also knows we are responding to a set of pressures that come from all of us and our appetites.

Speaking with salon.com, Pollan put it this way: “The logic of the food business and the logic of human biology and ecology are fundamentally in conflict. I don’t think we can get around that. The American population is growing at about 1 percent per year, and we can only eat about 1,500 pounds of food per year. So if you’re in the business of selling food, your natural growth rate would be about 1 percent a year. But Wall Street will not tolerate a company that grows that slowly. They want 5 to 10 percent growth as a minimum. So how do you get those kinds of margins? One way is to get people to pay more for the same 1,500 pounds of chow, and the other is to get them to eat more. And the food corporations pursue both strategies. Coca-Cola is the perfect example. It’s a penny or two in raw ingredients, mostly high-fructose corn syrup and some water. And people will pay you pretty well for that. It’s very hard, on the other hand, to make money selling whole foods, the supermarket chain of that name notwithstanding.”

In his latest book, *In Defense of Food: An Eater’s Manifesto*, Pollan distills his findings into a simple mantra. “Eat food. Not too much. Mostly plants.” That, of course, can be difficult for many in the U.S. who lack access to healthy food and the means to buy it. The

following case studies examine how people and organizations are working to make good food more available to more people.

CASE STUDIES

There are many emerging trends in the sustainable food movement that recast aspects of the current food system — from production to distribution. In aggregate, these efforts are building a body of evidence that proves there is an alternative and more sustainable way of producing food. It has been documented that no effort to curb childhood obesity will gain traction if the food environment is not addressed — especially around the critical issues of access and affordability of healthy food. What follows is a demonstrative, by no means an exhaustive, list of experiments underway.

PRODUCTION

These examples show how to reconnect producers and consumers and shorten the supply chain. Innovations in agriculture can lead to increased production without increased environmental degradation, and change the way we think of a model farm.

1. Farming

Growing Power

Growing Power is a national nonprofit organization and land trust supporting people from diverse backgrounds, and the environments in which they live, by helping to provide equal access to healthy, high-quality, safe and affordable food for people in all communities.

Growing Power provides hands-on training, on-the-ground demonstration, outreach and technical assistance through the development of Community Food Systems that help people grow, process, market and distribute food in a sustainable manner. It inspires communities to build sustainable food systems that are equitable and

ecologically sound, creating a just world, one food-secure community at a time. Growing Power has multiple farm sites located in Wisconsin and Illinois, some in urban neighborhoods and others in rural settings.

It was started by Will Allen, an urban farmer and MacArthur Fellowship Grant recipient for his work in transforming the cultivation, production, and delivery of healthy foods to underserved, urban populations. In 1995, while assisting neighborhood children with a gardening project, Allen began developing the innovative farming methods and educational programs that are now the hallmark of Growing Power, which he directs and co-founded.

www.growingpower.org

Four Seasons Farm

Four Season Farm is an experimental market garden in Harborside, Maine, which produces vegetables year-round and has become a nationally recognized model of small-scale sustainable agriculture. It grows produce of unparalleled freshness and quality in customized unheated or, in some cases, minimally heated, movable plastic greenhouses. It provides a practical model for supplying fresh, locally grown produce during the winter season, even in climates where conventional wisdom says it “just can’t be done.”

www.fourseasonfarm.com

Sky Vegetables

Sky Vegetables is an innovative, urban agriculture company dedicated to building sustainable, commercial-scale hydroponic farms on urban rooftops across America. Its mission is to improve the health and nutrition of city populations and provide new jobs and educational opportunities through the development of urban sustainable agricultural communities. Each Sky Vegetables farm will provide nutritious, chemical free

and locally grown produce, while reducing environmental damage.

www.skyvegetables.com

Vertical Farming

The concept of indoor farming is not new, since hothouse production of tomatoes, a wide variety of herbs, and other produce has been in vogue for some time. What is new is the urgent need to scale up this technology to accommodate another 3 billion people. An entirely new approach to indoor farming must be invented, employing cutting edge technologies. This site has extensive information about the concept of vertical farming.

www.verticalfarm.com

2. DIY Farming and CSA's 2.0

Crea Il Orto

Italian agricultural firm Azienda Agricola Giacomo Ferraris offers customers an opportunity to reconnect with the origins of their food. Its innovative website, Le Verdure Del Mio Orto (‘The Vegetables from my Garden’), lets anyone build an organic garden right from their web browser. Users first select a garden size based on the number of people they’d like to feed. The virtual gardener can then choose from 40 different types of vegetables, using a highly intuitive interface that includes information on expected yields and harvest times. Optional extras include a photo album of the garden’s progress herb and fruit beds, and even a scarecrow with a picture of the customer’s own face. Once the garden has been designed and fees paid, planting begins on the farm, which is located between Milan and Turin in northern Italy. As the organic produce grows, it’s picked and delivered to the customer’s door within 24 hours. Weekly deliveries are part of the package. Le Verdure del Mio Orto capitalizes on consumers’ hunger for locally

grown food via modern technology that allows them to get closer to the production and distribution process.

www.leverduredelmioorto.it

Green City Growers

Green City Growers are experienced organic farmers with a background in urban farming. Operating in the Boston area, Green City Growers build, design, and maintain raised bed, year-round produce farms built specifically for your yard, rooftop, or schoolyard.

www.growmycitygreen.com

Guerilla Gardening

A blog which began in 2004 as a record of “illicit cultivation” around London. Part of a wider “war against neglect,” it encourages others to reclaim public spaces to grow things. The site provides tips on how to start a new dig and joining existing “cells,” locally for your yard, rooftop, or schoolyard.

www.guerrillagardening.org

DISTRIBUTION

Examines concepts of access and affordability, and how to get more food to more people, especially in urban areas, and connects producers to consumers in a more efficient way.

FarmsReach

FarmsReach, which calls itself “the web hub for local grub,” is a web platform for local food logistics. Founded in 2007, it was based on five years work in sustainable agriculture in the San Francisco Bay area by a team of technology, agriculture, and sustainability professionals focused on putting our country’s farmers on the web

FarmsReach is a simple way for buyers to order food from local producers through delivery or local market. Producers create their “stall” where they list food, along

with pricing, packaging and other information. They define their reach, listing days they deliver to which locations through a web interface. Buyers search for food by typing in what they are looking for, then add the food to their cart. After placing the order, FarmsReach generates pick up lists and deliveries. Finally, the producers deliver fresh produce to markets or a delivery spot, where they meet buyers and settle the transaction.

www.farmsreach.com

Farm Vending Machines

In a world wrapped up in complex supply chains, small farmers are in a catch-22: sell to the supermarkets and get less cash for your carrots, or spend a lot more time and effort trying to sell directly to customers. Consumers, meanwhile, are torn between loyalty to local businesses and the convenience of those established supply chains. A German farm, Peter-und-Paul-Hof, has found a solution in the form of vending machines. The result of a collaboration between the farm and vending manufacturer Stuewer, the specially designed Regiomat machines currently sell fresh milk, eggs, butter, cheese, potatoes and sausage in thirteen German towns and communities.

www.stuewer.de/automaten/regiomat

Fair Tracing Project

A group of computer scientists and economic geographers in the UK put their heads together over the last few months to address a challenge in food systems design. As they see it, the Fair Trade movement faces obstacles to widespread adoption due to an ongoing divide between Northern consumers and Southern producers, as well as a lack of direct, specific information for customers about particular products. Their Fair Tracing Project proposes to enhance the growth of equitable global trade systems by adding digital tracing

technology to individual items so that they can be tracked, and their stories recorded, as they move from farm to table.

FishChoice

FishChoice.com is a new website for commercial seafood buyers looking for sustainable seafood products. It connects suppliers with buyers, and provides immediate access to a database of top quality seafood that has been ranked or certified by leading environmental groups.

www.fishchoice.com

Florida FarmLink

Florida Farmlink was conceived in 2006 as an economic and social networking tool. The service was established to connect various resources — land, expertise, apprentices, mentors, staff, tools, and various other services. The primary goal of Florida FarmLink is to expand both the numbers and abilities of the entrepreneurial base of small agricultural businesses, contributing both to economic vitality and community sustainability.

www.floridafarmlink.com

CONSUMPTION/NUTRITION

1. School Feeding Programs

Baltimore City Public School System

Public schools in Baltimore, Maryland, are making a concerted effort to improve healthy food choices for students including providing locally grown or distributed foods in its lunch rooms whenever possible, and working with local farms to provide more fresh produce. In addition, it was the first school system in the U.S. to adopt the Meatless Monday initiative for its 80,000 young people. The school system has also established the Great Kids Farm teaching facility and is committed to developing gardens at each of the systems' 201 schools. The overall goal is to introduce

a wide variety of projects to ensure its students eat and learn about healthy, environmentally-friendly choices. Meatless Monday is a non-profit initiative of The Monday Campaigns, in association with the Johns Hopkins' Bloomberg School of Public Health, to help reduce meat consumption 15% in order to improve personal health.

www.bcps.org (search: healthy food)

www.meatlessmonday.com

Edible Schoolyard

The Edible Schoolyard (ESY), a program of the Chez Panisse Foundation, is a one-acre organic garden and kitchen classroom for urban public school students at Martin Luther King, Jr. Middle School in Berkeley, California. At ESY, students participate in all aspects of growing, harvesting, and preparing nutritious, seasonal produce. Classroom teachers and Edible Schoolyard educators integrate food systems concepts into the core curriculum. Students' hands-on experience in the kitchen and garden fosters a deeper appreciation of how the natural world sustains us and promotes the environmental and social well-being of our school community.

www.edibleschoolyard.org

Time For Lunch Campaign/Slow Food

The Child Nutrition Act is a federal law that comes up for reauthorization in Congress every four to five years. It governs the National School Lunch Program, which sets the standard for the food that more than 30 million children eat every day. In the last few decades, as school budgets have been cut, our nation's schools have struggled to serve children the real food they need. The Time for Lunch Campaign is a project of Slow Food USA, an educational non-profit with the goal of creating a world in which everyone can enjoy food that is good, clean and fair.

www.slowfoodusa.org/index.php/campaign/time_for_lunch/about

The Lunch Box/Whole Foods and Chef

The Lunch Box is a web-based portal that enables all schools and school districts to make a healthy difference for all children in America by providing relevant information and the pragmatic tools necessary to make good food available for all kids. Now in beta mode, when fully functional, it will provide the multi-faceted approach necessary to transition any processed food based K-12 school meal program to a whole foods environment where food is procured regionally and prepared from scratch for the student population. As a free resource, The Lunch Box will provide the essential “tools” for examining, learning about, and implementing this type of healthy meal program. It will also offer a complete menu of choices for those seeking to implement program change in their schools and districts.

www.thelunchbox.org

2. Smart Technology

MyNutrikids

MyNutrikids.com provides a secure, family friendly system for online school meal prepayments by parents to their children's school meal accounts, and nutrition education. It offers the following services:

MyKids (Online Prepayments) Allows parents to deposit money on their children's school meal account via credit/debit card or Paypal account.

MyTray (Interactive Menus) Parents and students are able to view school breakfast and lunch options in a fun, interactive manner while learning how food choices contribute to the nutritional quality of their diet.

MyNutrition (Nutrition Education) Provides educational opportunities for school age families and district staff related to health,

nutrition and physical activity. Resources include articles, tips, tools, recipes, links, challenges and a section just for kids designed to appeal to your entire school community.

MyNutrikids.com is provided by Lunch Byte Systems, Inc., the leading maker of school food service management tools.

www.mynutrikids.com

3. Behavior Changing Campaigns

HopeLab's Ruckus Nation/gDitty

HopeLab is a nonprofit organization that combines rigorous research with innovative solutions to improve the health and quality of life of young people with chronic illness. It works closely with young people to understand their needs and to incorporate their critical and ongoing input into product development. Two HopeLab projects —Ruckus Nation, and gDitty — target obesity by focusing on physical activity in tweens, because sedentary behavior is harming kids' health and quality of life.

Ruckus Nation is HopeLab's program to develop fun, effective products that increase physical activity in 11 to 14 year olds to help address the devastating effects of obesity by getting kids to move more. Ruckus Nation began as an idea competition that tapped into the power of the global community — including kids — to generate new ideas for products to get kids moving. HopeLab is now moving ahead with the best ideas from the competition to assess their technical feasibility, potential development costs, and desirability to our target audience based on direct feedback from tweens.

One winning idea is an interactive game with wearable motion sensors that make your virtual character come alive as you

dance. Pick your music, record your moves, and share your virtual dance video online. You can even create group dances or test your skills by mimicking videos from other players. Another is a wristwatch with a built-in pedometer that counts every hop, skip and jump you undertake and encourages movement by offering a variety of rewards. Set your own goals and achieve them to access songs, games and other rewards online.

The first physical activity product in development at HopeLab is gDitty (working title). It's a specially designed activity monitor optimized to record tween movement, combined with a website where kids redeem activity points for rewards they choose. gDitty was conceived by a HopeLab researcher while developing a tween-friendly activity monitor for use in the evaluation of Ruckus Nation product prototypes. A first-generation gDitty prototype is now being evaluated in small-scale pilot studies.

www.hopelab.org

SYSTEMIC ISSUES: FINANCE/FOODSHEDS

Slow Money Alliance

Slow Money is a new nonprofit organizing and international movement to bring money back down to earth. Founded by Woody Tasch, a pioneer in merging investing and philanthropy, Slow Money's mission is to build local and national networks, and develop new financial products and services, dedicated to investing in small food enterprises and local food systems; connecting investors to their local economies; and, building the nurture capital industry.

The founding principles of nurture capital, a new financial sector supporting the emergence of a restorative economy, are soil fertility, carrying capacity, sense of place, care of the commons, cultural,

ecological and economic health and diversity, and nonviolence. These are also the fundamentals of the Slow Money Principles. Currently, Slow Money is launching a national campaign to obtain one million signatories to the Slow Money Principles.

The crux of the movement, as the Wall Street Journal recently noted, is "persuading investors to put some of their assets into businesses they can see, smell and even taste — to measure growth not by the flashing numbers on a stock ticker, but by the slow ripening of a tomato. In an era of industrial agriculture, where millions of acres are planted with the same variety of corn and millions of pigs are bred to be genetically similar, small local farms are the ultimate hedge fund. They preserve heirloom seeds and quirky breeds; strengthen the soil with organic nutrients; create local markets that connect producer directly to consumer." The Slow Money movement aims to address these concerns by creating regional funds to broker interaction between investors and farmers.

www.slowmoneyalliance.org

"Know Your Farmer, Know Your Food"

USDA has launched a 'Know Your Farmer, Know Your Food' initiative to connect consumers with local producers to create new economic opportunities for communities.

This is aimed at starting a national conversation to help develop local and regional food systems and spur economic opportunity by connecting producers with consumers.

<http://bit.ly/8xygl>

Sustainable Food Laboratory

The mission of the Sustainable Food Lab is to accelerate the shift of sustainable food from niche to mainstream. We define a sustainable food and agriculture system as one in which the fertility of our soil is maintained and improved; the availability and quality of water are protected and enhanced; our biodiversity is protected; farmers, farm workers, and all other actors in value chains have livable incomes; the food we eat is affordable and promotes our health; sustainable businesses can thrive; and the flow of energy and the discharge of waste, including greenhouse gas emissions, are within the capacity of the earth to absorb forever.

www.sustainablefoodlab.org

POLICY INNOVATIONS

How innovative policy changes on an administrative level can be used as incentives to provide greater access to good food, especially in urban areas.

New York City's Tax Incentive Plan for Grocery Stores

The Bloomberg administration is continuing its campaign against unhealthy food and expanding efforts to get healthy food to areas of the New York City where it has been lacking.

After clamping down on trans-fats and dispatching fruit and vegetable vendors to areas of the city they never dared to go, the New York City planning commission has approved a proposal by the Bloomberg administration to offer zoning and tax incentives to spur the development of full-service grocery stores that devote a certain amount of space to fresh produce, meats, dairy and other perishables. The plan — which has broad support among food policy experts, supermarket executives and City Council members, whose

approval is needed — would permit developers to construct larger buildings than existing zoning would ordinarily allow, and give tax abatements and exemptions for approved stores in large swaths of northern Manhattan, central Brooklyn and the South Bronx, as well as downtown Jamaica in Queens.

The New York proposal, adapted from a Pennsylvania program that provides grants and loans for supermarket construction, is unusual because it employs a mix of zoning and financial incentives to attract, rather than repel, a narrowly defined type of commercial enterprise. The new zoning would break down some barriers that grocery stores face, including competition from drugstores and other retailers that have higher profit margins than supermarkets do and can pay higher rents.

Under the proposed rules, a residential building with a fresh-food store could be up to 20,000 square feet larger than would normally be allowed, enabling developers to make more money by building more apartments. Smaller stores in certain commercial and manufacturing districts would be exempt from a requirement that they provide customer parking. And in manufacturing districts, developers could build stores of up to 30,000 square feet — the current limit is 10,000 — without going through the city's laborious and expensive land-use review process.

City officials, who have mounted several public education campaigns to improve nutrition, point to the rising use of food stamps at farmers' markets and the crowds of shoppers at the enormous Pathmark on 125th Street in East Harlem as proof of the pent-up demand for locally grown cauliflower and packages of boneless chicken breasts in the so-called food deserts that lack them.

The proposal would also require store owners to display signs at the entrances that include a special “Fresh” logo from the planning department and the statement, “This store sells fresh food.” Many supermarket chains, from bargain to upscale ones, including Whole Foods, said they hoped to take advantage of the incentives.

New York City’s Green Carts Program

New York City’s Green Carts Program aims to increase availability of fresh fruit and vegetables in New York City neighborhoods so that more New Yorkers can buy fresh fruit and vegetables closer to home. It is part of a wider effort, started in 2008, to encourage street vendors to bring fresh vegetables and fruit to low-income neighborhoods that have been called “food deserts” because of the predominance of fast-food outlets offering high-fat, high-sugar fare and the dearth of healthful culinary fare. So far, 2,000 new mobile food carts have hit the streets in areas of the five boroughs that have long been isolated from traditional supermarkets, grocery stores and farmers’ markets offering fresh produce at reasonable prices.

www.nyc.gov (search: green carts)