



SchoolFood Plus Evaluation

Interim Report: Phase 3 School Year 2005-2006

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Executive Summary

The SchoolFood Plus Initiative is a collaborative, multi-agency effort led by FoodChange and funded by the W.K. Kellogg Foundation to improve the eating habits, health and academic performance of New York City public schoolchildren while strengthening the New York State agricultural economy through the procurement of locally grown foods. The Initiative is based on the principle that school meals programs can enhance student health and academic achievement and that a multi-tiered effort of government, school, and community involvement is the most effective way to enhance the school food and physical activity environment. A corresponding principle is that creating direct marketing relationships and sales opportunities between farmers and large institutional buyers such as schools has the potential to enhance and strengthen a local agriculture economy. The five primary partners leading the effort include the SchoolFood division of the NYC Department of Education, the NYS Department of Agriculture and Markets, the NYC Department of Health and Mental Hygiene, and Teachers College of Columbia University, along with FoodChange.

In December 2004, Market Ventures, Inc., in partnership with Karp Resources and the Center for Health & Public Service Research at New York University, was retained by FoodChange to evaluate the SchoolFood Plus Initiative. This Interim Report comes at the mid-way point of the planned two-year Phase 3 of the evaluation process, coinciding with School Year 2005-2006.

During this phase of work, the Initiative expanded its programmatic focus beyond the three low income neighborhoods that had been defined by DOHMH as “catchment areas” for intense intervention (South Bronx, Central Brooklyn, and East and Central Harlem). Importantly, the elimination of the geographic restriction allowed SchoolFood Plus Cafeteria and CookShop[®] Classroom to become available to a much larger universe of schools. The change in geographic focus did not alter the demographic profile of the participating schools: the program is still focusing on low-income, predominately minority areas, which abound in New York City. Many of the participating schools are still located within the three catchment areas.

In addition to the contextual factors discussed in the previous Interim Report, including obesity and children’s health, the scale, structure, and history of both the New York City public school system and SchoolFood, and the requirements and constraints of the National School Lunch Program, this interim report noted the increasing awareness of and interest in school meals nationally, the federal mandate for schools districts to adopt school wellness policies, the impact of the No Child Left Behind Act, expansion of school autonomy in NYC and how that might impact school meals, and the Farm Bill reauthorization.

Key Findings

A number of important themes emerged during the course of the evaluation research this school year that can be considered “key findings.”

Evolution of partnerships - With the exception of Teachers College, which generally had a lower profile during the year, the relationships between the primary partners advanced significantly over SY 2005-06, as there was increased appreciation of each others’ roles, challenges, and accomplishments and increased trust among individuals. In part, this reflects the progress made

by FoodChange in changing its stance from an advocate or “gadfly” to a facilitating and less dogmatic program partner. Meanwhile, SchoolFood leadership showed increased awareness of the benefits of having a trusted nonprofit partner that operates outside the confines of city government. The sustained commitment of the NYS Department of Agriculture and Markets to the Initiative also garnered trust from the other partners.

Recognition of leadership changes - Leadership changes at FoodChange and within DOHMH played a major role in the SchoolFood Plus Initiative of the course of the school year. However, the program and partnership emerged without major course shifting.

SchoolFood Plus Cafeteria - The various elements encapsulated within SchoolFood Plus Cafeteria, including plant-based recipe development, the implementation of the recipes on menus both city-wide and more intensely in designated schools, and the expansion of the cooks training, all deserve recognition for the progress achieved during SY 2005-06. In the case of the training, the program took steps toward institutionalization as the culinary skills training developed by the SchoolFood Plus chefs was adopted by the district for its mainstream training program, implemented systemwide.

Procurement - Local procurement made significant strides forward in SY 2005-06. Most notably, it moved beyond DOD Fresh as the principal vehicle for introducing locally grown produce into the schools and developed and implemented several strategies for institutionalizing the local procurement agenda within the school system’s existing infrastructure of food purchasing. FoodChange retained Karp Resources to lead the local procurement effort and the firm worked closely with NYSDAM to create new approaches which should become a model for large institutions interesting in local procurement.

Complexity and intractability of the issue - Despite the significant progress made in many areas, the challenge of achieving the Initiative’s long term goals, namely improving the eating habits, health, and academic performance of NYC schoolchildren and improving the NYS agricultural economy, is monumental given the deep-rooted nature of the problems. The evaluation kept revealing further layers of complexity and external or environmental factors that make addressing these problems so difficult.

Funding uncertainty - Finally, the Initiative operated this year without certainty that funds would be available to keep the project going in SY 2006-07. Not only does funding uncertainty make it difficult to develop strategic plans, but it weakens momentum for the project and lowers morale.

Research Questions and Findings

The evaluation is organized around ten research questions, which are meant to guide the research during its entire, three year implementation.

1. What is SchoolFood Plus, how was it implemented, and how did implementation vary from the plan?

The SchoolFood Plus Initiative is a collaborative, multi-agency effort whose goal is to improve the eating habits, health and academic performance of New York City public schoolchildren by improving their knowledge, attitudes and behaviors about and access to plant-based foods, while strengthening the New York State agricultural economy through the procurement of local and regional produce. The Initiative is based on the principle that high quality school meals can enhance student health and academic achievement, and that a multi-

tiered effort of government, school, and community involvement is the most effective way to improve a school's food and physical activity environment. The initiative is divided into three areas: institutional change, school-based programming, and coalition building.

Institutional change has three main components:

1. *Plant-based recipes*

“Plant-based recipes” refer to newly introduced school cafeteria menu items that feature fresh vegetable, legume, grain or fruit ingredients that are prepared within school kitchens. The featured foods in the plant-based recipes can all be grown in New York State. These side dish recipes represent a reversal from the longstanding trend of using only “heat and serve” products and other foods that require few or no cooking skills. Implementation of the plant-based recipes is analyzed in detail in Research Question 2.

2. *Nutrition standards*

Nutrition standards refers to efforts to improve the nutritional quality of foods served by SchoolFood. The alteration of nutrition standards takes place within the context of USDA requirements, emerging nutritional theories and recommendations from various health organizations, and, in some cases, the longstanding recipe formulations of food manufacturers that supply SchoolFood. While nutrition standards were generally not discussed during the year as part of SchoolFood Plus, SchoolFood continued to move ahead with implementation of its new standards with manufacturers. Partly in response to a DOHMH initiative, SchoolFood also eliminated whole milk in the schools citywide and beginning in Spring 2006 offered only low-fat plain and chocolate milks.

3. *Local/Regional foods*

The SchoolFood Plus Initiative seeks to incorporate foods grown by New York State and regional farmers into the NYC public school system in order to simultaneously support the state's agricultural economy and improve children's health with more locally grown fresh fruits and vegetables. While it was originally intended to utilize locally grown foods for the plant-based recipes, the local procurement effort is no longer directly linked to these particular recipes but rather seeks to introduce local foods wherever possible into the procurement system.

Local procurement made significant steps forward during SY 2005-06 when FoodChange retained Karp Resources to lead the local procurement effort. Karp Resources worked closely with NYSDAM and SchoolFood to develop new strategies and play an intermediary role between suppliers of local foods and the buyers in the school system. A description of the new roles and strategies is discussed at length in Research Questions 8 and 9.

School-based programming has four key components:

1. *CookShop[®] Classroom*. CookShop[®] Classroom is a lower elementary curriculum developed and offered by FoodChange to elementary schools in NYC over the past 10 years. The program brings a tactile experience with food and cooking directly to the hands of young children, in the familiar environment of their classroom, combining lessons on cooking, food, and plants with skill-building in math, social sciences, natural sciences and language.

All participating schools used the new full year program, rather than the previous semester

long curriculum. Over the course of 23 lessons, each of the ten foods is introduced every two weeks. The first week provides an exploration of the food and the second week offers a hands-on cooking experience with the food. The participating teachers interviewed were unanimously positive and enthusiastic about the program, saying that the children looked forward to CookShop[®] every week, they were attentive to the lessons, and there was less absenteeism on CookShop[®] days because the students wanted to be in school. The teachers also felt that the program had made children less picky eaters and more open to eating fresh fruits and vegetables

Originally, the SchoolFood Plus Initiative set ambitious expansion goals for CookShop[®] Classroom, projecting that 45 schools and 240 classrooms would participate in SY 2005-06. The revised goals placed the number of schools at 17 with 129 classrooms (an average of approximately eight classrooms per school). This represented the addition of a single additional school from the previous year but 23 more classrooms and nearly 450 additional children, as well as higher “doses” of programming because all of the schools used the year-long curriculum. The program met the revised goal of 17 participating schools with the expanded full year curriculum. Within these schools, there were 130 participating classrooms and 2,470 students, both slightly more than the target.

Two new iterations of CookShop[®] Classroom were developed in SY 2005-06: Farm to Classroom (in conjunction with the urban farm run by Added Value in Red Hook, Brooklyn) and CookShop[®] After School, adapted for The After School Corporation (TASC).

2. *SchoolFood Plus Cafeteria (previously named CookShop[®] Cafeteria)*. SchoolFood Plus Cafeteria includes three principal components: the implementation of plant-based recipes in school cafeterias; training cafeteria staff and managers to prepare and serve the new recipes; and marketing activities to encourage children to eat the recipes. For children who have been exposed to CookShop[®] Classroom, it brings the same foods and similar recipes they have studied and tasted with their teachers into the school cafeterias. For all the other students in the public school system, SchoolFood Plus Cafeteria represents the introduction of new plant-based menu items. SFP Cafeteria includes the Initiative’s social marketing efforts which were formally part of “Cafeteria as Classroom,” such as bulletin boards and tasting events. A detailed description of the implementation of the recipes is found in Research Question 2.

SFP training sessions moved from Food & Finance High School in Manhattan, which had inadequate kitchen and training facilities, to a new, permanent, and well equipped center at Robert Wagner School in Queens. Most significantly, SchoolFood decided that its employee training division would incorporate SFP training into its mainstream cook training program, thereby reaching every such new employee of SchoolFood and many cooks who receive continuing education. This is particularly important as SFP recipes are implemented city-wide.

SFP Cafeteria conducted a variety of social marketing activities, such as taste testing events, SFP posters, point-of-purchase displays and signs, and trading cards. During taste testing events in nine schools, the recipes received an overall 79% “thumbs-up” vote, with the Steamed Broccoli and Roasted Cauliflower drawing the highest positive response rate at 93%.

FoodChange and the SFP chefs developed a site visit protocol and written tracking forms to record the implementation of the SFP Cafeteria program. During SY 2005-06, 115 site visits were conducted by the SFP chefs and/or FoodChange staff. They visited 60 of the 63 participating cafeterias, or 95% of the total. The tracking form included information about

cooking equipment, concerns with ordering and receiving products, recipe production, marketing materials, and training.

3. *Cookshop[®] for Adults (formerly Vegetable of the Month[™])*. Cookshop for Adults (CfA) is a program developed by FoodChange to teach adult food stamp recipients in New York City how to purchase, store, cook, and enjoy fresh vegetables in season. It promotes plant-based, whole or minimally processed foods. As part of SchoolFood Plus, the program is being introduced to parents in public schools for the first time.

CfA was held in 33 locations in the study period, the majority of which are agencies such as community-based organizations, WIC centers and food pantries. CfA took place in two elementary schools in SY 2004-05 and increased to eight schools in SY 2005-06, meeting the logic model goal of eight schools. The program provided 491 direct contacts with parents and/or caregivers in the schools.

4. *Linking Food and the Environment (LiFE)*. LiFE is a science curriculum developed by Teachers College. LiFE is targeted to upper elementary/middle school students and is viewed as the upper grade complement to CookShop[®] Classroom for classroom-based nutrition education. In addition to meeting science and health education standards, LiFE seeks to provide students with clear, conceptual understandings of the complex roles of biology and the 21st century food system in influencing personal behavior, health, and body size; help students build skills and attitudes that lead to competence or personal control in navigating today's complex food system and avoiding a sedentary lifestyle; focus students on improving healthful eating and physical activity practices as a means to overweight prevention; and increase students' interest in the health sciences and health science careers.

Two prior components of school-based programming, Cafeteria as Classroom and S.P.A.R.K., were dropped from the SY 2004-05 logic model. The social marketing aspect of Cafeteria as Classroom was integrated into SFP Cafeteria. DOHMH decided to focus S.P.A.R.K. on daycare centers, which it regulates, in part because DOE adopted a new physical education curriculum. This removed the only link to physical activity within the Initiative.

There are four components of the SchoolFood Plus **coalition building efforts**, structured within three tiers: community coalitions, city-wide coalitions and a national coalition. These components are discussed in Research Question 10.

2. *How have SchoolFood Plus recipes been utilized by OSF and participating schools?*

SchoolFood Plus recipes are based around eight of the ten foods that are featured in the CookShop[®] curriculum: beans, broccoli/cauliflower, carrots, corn, greens, potatoes, rice, and salad. The other two foods, apples and whole wheat bread, are regularly served in school cafeterias. According to the original (2004) logic model, more than 16 SFP recipes were supposed to be developed and then placed in the menu cycles in SY 2005-06. The revised logic model increased the number of recipes to 40. In SY 2005-06, six of the 32 recipes from SY 2004-05 were dropped and 14 new recipes were introduced, meeting the program's goal of 40.

Based on the goal of having the recipes appear 12 times each month in each of the 63 SFP Cafeterias, the recipes should have *appeared* on the schools' menus 5,100 times. In practice, the recipes were actually placed on the menus more frequently, 5,489 times, resulting in a

compliance rate of 108%. This demonstrates that the SchoolFood staff who set the monthly menus have embraced the SFP recipes and are actively utilizing them in their menu construction.

Over the course of the school year, FoodChange and SchoolFood refined the system they created for tracking the implementation of the recipes. While the recipes appeared on the menus more than 5,100 times, they were actually *served* only 4,105 times, resulting in an execution rate of 80%. This equates to an average of 9.7 recipes being served each month in the SFP cafeterias, rather than the target of 12.

SFP recipes also appear on the four city-wide lunch menus (elementary, Jr./Senior High, satellite hot, and satellite cold) although less frequently. At four times per month over the ten month school year, the recipes should therefore appear 200 times on these five different menus. The recipes actually appeared 346 times, so the compliance rate was 173%. However, there was no system in place to verify whether the recipes were actually served.

Although not required as part of their MOU with FoodChange, SchoolFood utilized the SFP recipes for their Satellite Cold, Satellite Hot, and Supper menus, which expanded the reach of the recipes to the entire school system, with its 1,200 cafeterias.

Among the 62 SFP cafeterias, data was collected on the individual recipes for both their frequency of being placed on the menu and of actually being served. The distribution was far from equal. Salad is overwhelmingly the most frequently scheduled and served category, appearing on the menus 35% of the time, dwarfing the next category, corn, which was utilized about one-third as often. At the bottom end, rice and carrots are only served about 5% of the time.

In the SFP Cafeteria schools, the SFP recipes are supposed to be implemented 12 times per month, or 120 times per year. If the 40 different recipes are utilized evenly, then each recipe would only appear three times over the course of the school year. According to one of the SFP Cafeteria managers, “the more we offer it [a recipe], the more they’ll try it”. This logic suggests that fewer recipes need to be offered more often so the children will accept the foods as commonplace. Coupled with the challenge of executing so many recipes, this logic suggests that perhaps the number of recipes should be significantly reduced.

3. Has students’ consumption of SchoolFood Plus recipes increased in participating schools, and why?

This outcome research was designed to test two primary hypotheses:

1. Children who learn about and cook fruits and vegetables in their classroom as part of CookShop[®] Classroom are more likely to choose and eat recipes made with these fruits and vegetables when they are offered in the school cafeteria, and
2. Children who are exposed more frequently to these recipes because they are on the menus more often in SFP Cafeteria are more likely to choose and eat these recipes.

To address Research Questions 3, 6 and 7, the outcome evaluation employed two types of methodologies tested in Phase 2: 1) a plate waste assessment of second and fifth graders’ lunch trays to address consumption of SFP recipes; and 2) a survey of second graders to assess knowledge, attitudes and behaviors closely related to Cookshop[®] Classroom content.

The outcome evaluation utilized a quasi-experimental design with two cross-sectional samples in nine schools in the three conditions: intensive, SFP Cafeteria-only, and comparison. The comparison schools had the standard SFP recipes four times a month, but no other SFP activities. Within the intensive model schools, the study compared students who receive the CookShop[®] Classroom curriculum and those who do not. To further explore the question of why children do or do not eat SFP recipes, the research team rated the dining environments in the nine schools on dimensions such as how crowded, noisy, rushed, chaotic and attractive they were.

The “pre-test” was scheduled to occur in fall 2005, but this pre-test was delayed significantly due to contract and Institutional Review Board (IRB) issues. The pre-test for plate waste assessment spanned the months of November and December 2005 and for the survey of second graders February and March 2006. The “post-test” occurred in the late spring of 2006 (May and June). Because of the lack of time between pre- and post-test, the analysis was limited in certain instances

Utilizing digital photography, a plate waste assessment technique was used to determine how much of specific SFP recipes was eaten. This provided a direct method of assessing a key goal in the SFP Initiative: whether children are eating more healthy foods. This technique also had the advantage of being appropriate for children of all ages. The plate waste assessments took place on days when three predetermined SchoolFood Plus recipes were scheduled to be served in each school. These recipes – SchoolFood Plus Salad, Steamed Broccoli and Roasted Cauliflower, and Summer Corn Stew – are recipes that are served city-wide. This means that they are considered appropriate for preparation in school cafeterias that do not have a full cooking kitchen.

Of the 83 trays in intensive schools at pre-test that included the SFP item and had ratable pre and post lunch photos, 24 of those trays, or 29%, had any of the item eaten. At pre-test, trays in SFP Cafeteria-only schools were significantly **less** likely to have any of the SFP items consumed than the trays in the other two conditions ($p < .01$). The differences in percentage with any eaten at post-test were not statistically significant. These results are counter to the research hypothesis in two ways: at pre-test, all of the schools should have had the same likelihood of eating the SFP recipes, while at post-test, more children in SFP Cafeteria-only and Intensive schools should have eaten the SFP recipes compared to the comparison schools.

Comparing the three recipes, children are most likely to eat Steamed Broccoli and Roasted Cauliflower, somewhat less likely to eat tossed green salad, and very unlikely to even try Summer Corn Stew. Change in consumption was minimal from pre-test to post-test and differences in consumption by grade level were not statistically different at either time point. There were also no differences by race/ethnicity.

Even with methodological limitations and loss of data, several messages stand out from the plate waste assessments. First, not all children are being truly “exposed” to SFP recipes, even when they appear on the serving line. This lack of exposure is *not* primarily due to whether children are selecting the SFP recipes but whether cafeteria staff place the SFP recipe on their lunch tray. This is particularly true in comparison schools where, at post-test, only 36% of the lunch trays ended up with the SFP recipe of the day.

Second, and more importantly, SFP recipes are generally not being consumed. Overall, of the 479 trays with the SFP recipe of the day (across school condition and time point) and usable data, only 88 trays (18%) had any of their SFP items eaten; on 82% of these trays the SFP item

was untouched. Program exposure, either through SFP Cafeteria or Cookshop[®] Classroom, did not appear to affect the eating of SFP recipes as the percentage of children eating the recipes actually dropped between the pre- and post-test administrations. On the other hand, there were notable differences by recipe, with Steamed Broccoli and Roasted Cauliflower as the most popular of the three recipes studied and Summer Corn Stew being extremely unpopular. This seems to suggest that the simplest recipes are consumed the most. The most complex recipe studied, the Summer Corn Stew, had the largest number of ingredients all cooked together and this recipe was consumed the least. SchoolFood Plus Salad had the next largest number of ingredients and the percentage of children eating the recipe was in the middle. Finally, the cauliflower and broccoli recipe had the fewest, most clearly identifiable ingredients and was eaten the most. Based on the plate waste results, children seem to prefer the simplest recipes with fewest ingredients.

4. Has SchoolFood Plus led to increases in the number of students eating school meals?

This outcome evaluation question is meant to test the hypothesis that SchoolFood Plus activities are leading more children to eat school meals in the targeted elementary schools. Data on participation is studied to see if more children within the targeted elementary schools are eating school meals (including breakfast and lunch) over time and to what level the increase (if any) can be attributed to SchoolFood Plus. The baseline year is SY 2004-05.

It was noted in the previous Interim Report that SFP was unlikely to have much impact on eligibility or participation rates in elementary schools within the catchment areas because rates are already so high. In elementary schools across the city, 85% of students in SY 2004-05 were eligible for free or reduced cost school meals. Among the SchoolFood Plus schools, Central Brooklyn represented the most extreme case with 98% of the students eligible for free and reduced meals, as were 91% of the students in Harlem and 88% of the students in the South Bronx.

Similarly, average daily participation (ADP) rates in school lunches citywide were very high, with 83% of all students participating in school lunches, based on average daily attendance (ADA). For SchoolFood Plus schools in the catchment areas, ADP ranged from 88% to 94%. While there is room for improvement, the amount of potential increase is minimal in these schools.

Participation rates in school breakfasts were much lower, with just 22% of students participating. Because the starting place is much lower, there is much more room for expansion in participation. The participation rates are also much lower in the high schools. Since SFP programming is focused on elementary schools, it is unlikely the SFP would have any impact on the number of high school students eating school meals.

5. How have students, teachers, administration, parents, and coalition partners responded to SchoolFood Plus?

This question relates to the formative evaluation and seeks to determine, in a qualitative way, the relevance and importance of SchoolFood Plus to people within reach of the NYC school meals program but who are not involved in the leadership of SchoolFood Plus. This question looks at how the Initiative has been communicated to these various constituencies and their impressions of the Initiative.

As in Phase 2, many of the interviewees in SY 2005-06 were asked to define or describe SchoolFood Plus. More often than not, interviewees were keenly aware of the goals of their component part of SchoolFood Plus but minimally familiar with other parts. A principal of a SchoolFood Plus intensive school pointed to a “change in mentality” throughout the school that he attributed to SchoolFood Plus. However, the principal felt that “SchoolFood Plus is not really ingrained as an entity in people’s minds,” but he emphasized that he was not convinced that it was important that the SchoolFood Plus brand “stick” in that way: “what they’re doing is more important than what it’s called.” This principal’s vision of success for SchoolFood Plus was broad and ambitious: decreased obesity; “monthly meetings with everyone working toward common goals;” healthy meals and snacks; changes in parents’ eating habits; improved food presentation and cafeteria workers’ attitudes; and more open communication between all the players and components of SchoolFood Plus around the city.

In SY 2005-06, SchoolFood continued to receive overwhelmingly positive responses to the SFP recipes and to cafeteria programming. Nine taste testing events were held over the course of the year, at which a total of 3,475 votes were cast by children. Overall, 79% voted “thumbs up” in these events, with the Steamed Broccoli and Roasted Cauliflower being the most popular (93% thumbs up) and Sweet Potato with Pineapple and Ginger being the least popular (65% thumbs up).

One cafeteria manager in a SFP intensive school noted that children are eating more vegetables and are coming back for seconds of their favorites. She and the head cook measured the success of SFP recipes in peanut butter and jelly sandwiches: with more and better food choices, fewer children request peanut butter and jelly. In fact, the head cook noted that they prepare about 100 sandwiches daily, down from 900 two years before.

6. Does participation in CookShop[®] Cafeteria or CookShop[®] Classroom lead to change in KAB about food, farming, cooking, and consumption compared to nonparticipants?

7. Have the three different combinations of SchoolFood Plus programming (cafeteria only, classroom only, or saturation intensive model) led to different outcomes in terms of student knowledge, attitudes, behavior, and program satisfaction?

Research Questions 6 and 7 both rely on child survey data. Survey participants were drawn from 28 classrooms (12 intensive, 8 Cafeteria-only, 8 comparison) at pre-test and 34 classrooms (12 intensive, 11 Cafeteria-only, 11 comparison) at post-test, with a 56% consent rate, which was slightly more than the anticipated 50%. In all, 641 individual surveys were conducted.

The design employed in this study assumes that students start in the same place at the beginning of the school year and that any changes at the end of the school year are due to the programs they are exposed to at school. At pre-test, the results between the schools should be statistically indistinguishable. At post-test, the hypothesis is that students who have been exposed to SFP programming should have measurable improvements compared to students who have not received the programming.

As noted earlier, the pre-test was unavoidably delayed and does not represent a true pre-program “baseline.” The comparison of the pre-test data bears that out: across both plate waste assessment and survey data, children in the intensive schools had “better” scores than the other two conditions. This might suggest that children in those schools had already changed as a result

of their exposure to the program earlier in the year. However, it is also possible that the students within the intensive schools were somehow different to begin with. This latter interpretation receives some support by virtue of the fact that, when there are differences between SFP Cafeteria-only schools and comparison schools, *the differences favor the comparison schools*. Comparison schools were recruited with promise of and partly because of interest in Cookshop[®] Classroom in the future. In that sense these comparison schools resemble the intensive schools and, in effect, “control for” any inherent differences, such as motivation and/or interest in nutrition, that lead some schools to participate in Cookshop[®] Classroom. SFP Cafeteria, on the other hand, is a program that is handled through SchoolFood and its cafeteria managers and does not rely on principal and teacher support. Because of that, SFP Cafeteria schools may not be comparable to the other two conditions in interest, motivation and perhaps other school-based attention or even programming related to food and nutrition issues.

The pre-test generally occurred earlier in time for plate waste assessment than for the survey (due to the difference in the need for parental consent) and was probably less compromised by exposure to the program. The pre-test for the survey was so compromised by the delayed start and by the much closer relationship of the survey to Cookshop[®] Classroom, that the analysis focuses on the post-test survey data only.

There are definite differences in attitudes, knowledge and behavioral intentions/preferences among school conditions, but it is not clear to what those differences can be attributed. Children in the intensive schools demonstrate attitudes and knowledge more in line with the goals of SchoolFood Plus than children in the other schools, but children in the comparison schools are often close behind them, with better scores than the children in the SFP Cafeteria-only schools. Furthermore, there is very little difference within intensive schools between current CookShop[®] Classroom participants and non-participants. This lack of difference may be, at least in part, due to non-participants’ prior participation in CookShop[®] Classroom (as kindergartners or first graders) and unfortunately there is no way of determining prior participation. Taken together though, along with the pre-test findings, the overall findings from the survey suggest a significant impact of something about the *schools* involved in the program and those that *want* to be involved in it, the comparison schools. Having SFP Cafeteria-only is a function of type of kitchen, SchoolFood selection, and willingness of cafeteria managers, whereas schools currently or potentially involved with CookShop[®] Classroom have expressed serious interest and commitment to food and nutrition issues. These schools may have other types of food related programs and campaigns already going on, or may have staff and parents actively promoting good nutrition.

8. *How has procurement of locally grown fruits and vegetables changed as a result of SchoolFood Plus and who are the participating farmers?*

The starting place for assessing how procurement of locally grown fruits and vegetables has changed as a result of SFP is understanding how the procurement system works. The system includes numerous actors who operate with strict local, state, and federal regulations. The system faces significant budgetary constraints, food industry constraints, and a robust bureaucratic and technical structure that has been primarily focused on meeting the demands of such a large school district, including an overarching concern with food safety. Over many decades, the SchoolFood procurement system has evolved its own “culture” of procedures, protocols, and relationships.

Within SchoolFood, food procurement starts with nutritional requirements, which must meet minimum standards set by USDA and the department's own standards. All products and recipes served in the cafeterias need to align with the nutritional requirements, an array of other criteria such as cultural appropriateness and, of course, the budget. The foods that are served by SchoolFood require an interplay between the Culinary Concepts, Food Technology, and Procurement departments, as well as the staff nutritionist.

As the name implies, Procurement has responsibility for ensuring the specified foods and other goods are purchased for the school system. The annual food procurement budget is about \$123 million, making SchoolFood among the largest institutional buyers of food in the country. Procurement, however, does not purchase foods directly but rather uses several different procurement mechanisms. The most important of these is its contracts with **private distributors**. Every three years SchoolFood issues a bid for private distributors who are interesting in supplying the 1,200 feeding sites with food. At present, there are four independent distributors who operate under contract to the school system. These distributors handle all foods except milk and bread, which are delivered to the schools under separate contracts. For some products, especially fresh and frozen produce, there is significant leeway in what the distributor can source depending on their resources, values, or business strategies. Often, distributors work with food brokers to help them source fresh and frozen items. As a result, *distributors and food brokers* are the key interfaces with the food industry, particularly for fruits and vegetables.

Another important method that SchoolFood uses to procure foods is called "contract direct." This mechanism permits SchoolFood to have direct contracts with suppliers (mainly manufacturers) for a variety of items. SchoolFood negotiates the price directly with the supplier rather than leaving it to the distributors, based on estimated purchase quantities, not guarantees.

The contracts between the distributors and SchoolFood include a system of fines that are levied against the distributors if they fail to deliver foods to the schools on time (among other infractions). This system provides a strong incentive for distributors to utilize suppliers they know and trust, and probably serves to discourage experimentation with unfamiliar procurement strategies.

Federal law has been interpreted by state and local school officials to prohibit specifying or favoring a product from a specific geographic region. Under this interpretation, SchoolFood cannot specify that apples or any other product come from New York State. However, *variety specification* is permitted, and when a variety is only grown in commercial quantities in the New York region, this will assure that product sourcing is local. To support the local procurement effort, SchoolFood wrote a specification for fresh apples that identified a variety only grown in New York State. As a result, according to information provided by SchoolFood, 5,548,932 pounds of local apples were purchased from November 2005 to October 2006, infusing the state's agricultural economy with \$1,410,354.

A second major prong was the effort to maximize the amount of NYS product purchased as part of the Department of Defense (DOD) Fresh program. The highlight of this effort was the introduction of pre-sliced apples that were grown and processed in New York and which proved to be very popular with students. SchoolFood procured 1,114,075 pounds of these sliced apples (grown, processed and packed in New York) between November 2005 and October 2006, adding another \$1,044,557 to the local agriculture economy.

A key learning of Phase 2 was that, unlike the typical farm-to-school paradigm of an individual farmer supplying a school or school district with farm product, the local procurement agenda in New York City could not be realized by working with individual farmers. The scale of the school system, the existing procurement system, kitchen systems, and regional agricultural infrastructure and logistics prevent these types of relationships.

Even if SchoolFood wanted to change its procurement system to favor local farmers, a number of barriers make it challenging, including difficulty in identifying individual farmers, limited growing season, few farmers who can meet the volume requirements, and the chain of brokers and distributors that generally put the purchasing decision outside the hands of the school system.

SY 2005-06 represented a major change in the local procurement efforts of SFP. In December 2005, FoodChange retained Karp Resources, a member of the SFP Evaluation team, to collaborate with and complement the work of Bill Jordan and Bob Lewis of NYSDAM on local procurement efforts, in partnership with SchoolFood. Karp Resources brought significant experience working in the restaurant, retail, and food rescue sectors and a new set of private sector skills to the local procurement effort. It was also thought that an independent agent could work in partnership with and serve as a complement to NYSDAM, because an independent agent could more easily “strike deals” with suppliers without the concern of showing favoritism.

The SFP local procurement strategy shifted to an “inside-out” approach, which used SchoolFood’s procurement systems and their relationships with suppliers as a starting place, rather than the previous “outside-in” approach, which started with identifying what products are produced in the region and then trying to find a way for them to enter the system. Karp Resources spent approximately three months analyzing data about what SchoolFood purchased, meeting with the Food Technology department to understand specifications and packaging requirements, and determining the potential quantities of local foods that could be procured from the region. This analysis included determining what forms these products would have to take. The information gained from this approach led the team to focus on the importance of the four distributors who make many of the purchasing decisions and finding locally grown substitutes for foods already being purchased under the existing procurement system, rather than trying to devise new systems that would circumvent the established procedures.

Interviews with the distributors revealed that they would be very responsive to SchoolFood’s interests. This is logical since SchoolFood represents a significant percentage of each distributor’s business. It was believed that if SchoolFood expressed an interest in local foods, then the distributors would seek local foods in order to make their client happy, even if the written specifications did not require local sources of food.

Reaching the distributors with the local foods message required strong SchoolFood support. Since SchoolFood leadership did not yet fully subscribe to the underlying philosophy and benefits of local food procurement, the local procurement team focused on trust building,

advocacy, and education to change this attitude. If SchoolFood leadership “bought into” the local procurement agenda more deeply, then they would be in a position to press the importance of local procurement on the distributors. At the same time, SchoolFood leadership was understandably cautious about staying within legal and ethical boundaries, as well as budgetary and volume constraints.

The initial research provided an annual estimate of the quantities and dollar amounts of foods that could be produced locally, assuming that SchoolFood menus and purchasing practices remained constant. It was also determined that more local foods could be purchased if SchoolFood adopted *seasonal menus* that incorporated locally grown foods during local harvest seasons (in fact, SchoolFood is moving toward seasonal menus). The analysis revealed that over the course of a 12 month period, SchoolFood procured \$16 million worth of fruits and vegetables that could be grown, processed and packed regionally, most notably fresh melon, salad greens, tomatoes, and pears. Among the frozen items, the top products procured are corn, broccoli, green beans, carrots, and spinach. Finally, among the minimally processed items, the top products procured are potatoes, peaches, pears, apples, and tomatoes.

To date, most farm-to-school programs around the country have focused on fresh produce, as did SFP with its reliance on the DOD Fresh program. However, Karp Resources felt that frozen and minimally processed fruits and vegetables also offered a major opportunity and therefore Karp Resources developed a distinct strategy for procuring frozen and minimally processed foods.

Over the course of the year, Karp Resources developed a strong independent role in sourcing local products, made possible through the ability to “make deals” between the distributors, brokers, packers, and growers. One participant described Karp Resources as a “public interest broker,” a role that no one had played before and that offered both flexibility and a business approach while keeping the social and economic goals of SFP firmly in place.

Over the course of the study period, the local procurement strategy made significant inroads in its efforts to gain the trust and participation of SchoolFood leadership. The local procurement team demonstrated their patience and determination to learn the SchoolFood systems and, as they uncovered high potential opportunities, they felt a progressive shift from working as outsiders to becoming collaborators. As in other contexts, trust became a critical precursor to programmatic change, and trust building took time, the right approach and personality, and demonstrable accomplishments.

To build industry awareness, the local procurement team created Pride of New York seminars to explore opportunities among NYS-based manufacturers and distributors for substituting New York grown or produced products for similar items being purchased for the school system. Karp Resources organized site visits to SchoolFood distributors for key members of the SchoolFood staff after realizing that some staff had never visited the warehouse facilities to see first-hand how food is handled. One key learning during the distributor site visits was the generally poor handling of fresh produce. This occurs in part because fresh produce represents a small volume of the foods that the distributors handle and it is not their core business. This finding opened up discussions about creating a **separate produce bid**. This concept gained traction within SchoolFood leadership and is generally supported by its distributors as well, who find distributing the small quantities of needed fresh produce an unprofitable nuisance.

In April 2006, SchoolFood gave Karp Resources the opportunity to source two fruits, plums and peaches, for summer meals, using existing product specifications and the previous year's prices. Based on SY 2004-05 quantities and prices, this opportunity represented 12,648 cases of plums valued at \$212,915, and 22,300 cases of peaches valued at \$263,685. Although plums were deactivated from summer menus because of high prices, three distributors purchased nearly 71,000 lbs of local fresh fruit for the purchase price of approximately \$47,000.

9. How has participating in SchoolFood Plus affected local farmers, individually and in aggregate?

Over the course of SY 2005-06, locally grown products entering the NYC schools increased in three areas:

- Apples: The sliced apple contract secured by Champlain Valley Specialties will provide \$4.2 million worth of NYS apples over a three year period.
- Peaches: Deals brokered by Karp Resources for summer and fall meals totaled \$48,265 and included 87,900 lbs of New Jersey peaches, 40,700 lbs of New Jersey nectarines, and 6,600 lbs of New York pears.
- Yogurt: Upstate Farms, a NY-based yogurt producer, contracted with SchoolFood on a four ounce yogurt which exceeded SchoolFood's specs, doubling the industry's shelf-life standard, with more efficient packaging that lowered transport costs, and replacing high fructose corn syrup with natural sugars. SchoolFood orders approximately 7,000 cases per month, at a value of over \$74,000 per month to local producers.

The local procurement effort is significantly impacted by the region's diminished agricultural infrastructure, which is needed to contract, aggregate, grade, pack, sell, and distribute local farmers' products. Collectives or companies with both the capacity and know-how to take food through the many steps from farm to cafeteria and the willingness to work seasonally with the region's farmers are essential to helping local and regional farmers "break in" to the often elusive world of wholesale and institutional sales. To be effective in the long term, the local procurement strategy for the NYC public schools needs to address rebuilding of agricultural infrastructure, thereby giving local farmers the capacity to serve SchoolFood.

There are myriad ways that farmers and other players across the regional farm economy may be affected by SFP local procurement efforts. Some of the projects percolating around the region include: aggregation services; grading and packing lines; regional distribution mechanisms; development of a NYC wholesale farmers' market; upgrade of Hunts Point Produce Terminal Market; and education for and buy-in from distributors and manufacturers about who the local farmers are, what they produce, and why local might hold value for their customers. The successful implementation of these projects is critical for taking local procurement to scale.

The SFP local procurement work has the potential to influence the development of this needed infrastructure around the state by helping to develop successful partnerships between large scale buyers, such as SchoolFood, the distributors that serve them, brokers, processors, and farmers. NYSDAM is playing a leadership role through its Pride of NY program and Farm to Cafeteria initiative but the key motivator will be large buyers of fresh food (such as SchoolFood) making a commitment to local purchasing. These buyers and their private sector partners can

identify opportunities for new products, help source the products, support the region's farmers, and track local purchasing.

An important step in making a long term commitment to local foods purchasing emerged at the end of the study year, when SchoolFood requested assistance for Karp Resources to develop a three year strategy for local procurement.

10. What value have the various coalitions added to the SchoolFood Plus program?

Coalitions are intended to leverage increased attention to food, food systems, agriculture, nutrition and health into momentum for SchoolFood Plus activities. The current logic model identifies four coalitions:

1. Food and Fitness Councils (at the individual intensive model schools)
2. NYC Systems Coalition
3. Youth Food Corps (EATWISE)
4. National Urban Coalition

Significant progress was evident in several of the SFP coalitions, particularly the youth-led activities and the school-based Food and Fitness Councils. EATWISE made great strides forward in terms of both the quality and quantity of programming. Further, while they are not listed as a coalition in the logic model, the Primary Partners themselves make up a coalition of five organizations. The Primary Partners made strong progress in improving their relationships over the course of the year, particularly among FoodChange, SchoolFood, and NYSDAM. This improvement was most evident in increased trust among the organizations, which led to improved communication and greater feelings of partnership.

At the same time, the NYC Systems Coalition and the National Coalition lagged behind. Internal changes at FoodChange left the organization understaffed, with insufficient resources dedicated to overseeing, expanding and developing these coalitions. In part, the lack of progress on these two elements of SFP reflects the fact that SFP partners became increasingly active in other coalitions, networks, and working groups. For example, FoodChange, NYSDAM, and SchoolFood leaders regularly attended meetings of the NYC Food Systems Network (which emerged independent of SchoolFood Plus coalition activities). While not focused exclusively on school meals, the collective goals of the Food Systems Network align with the objectives of the NYC Systems Coalition in terms of local agriculture, food systems, public health, food access, and nutrition. Both FoodChange and SchoolFood played central roles in a Baum Forum event on schools and food in April 2006, which included stakeholders well beyond New York City. In this way, SFP was able to achieve coalition goals without playing the role of organizer.

On the national front, FoodChange has been actively participating in the National Farm to School efforts as well as national policy initiatives, such as the Kellogg-funded Farm and Food Policy Project, convened by the Northeast Midwest Institute. Similarly, EATWISE students have begun forging relationships with other food systems-focused youth groups around the country, including the California-based Rooted in Community Coalition and Boston's Food Project. Activity with these other groups has done a great deal to raise awareness around the city, state, and country about SchoolFood Plus, linking this initiative to the increasingly lauded school meal reforms in New York City.

Conclusions

During SY 2005-06, the SchoolFood Plus Initiative continued to make significant progress. These accomplishments lay the foundation for future collaboration and ongoing improvements to the school meals program.

Some of the important outcomes for SY 2005-06 include:

- **Increased trust among the primary partners**, particularly between FoodChange and SchoolFood and between NYSDAM and SchoolFood.
- **SchoolFood buy-in** of the SchoolFood Plus program. This change was enabled in part by the change in name from CookShop[®] Cafeteria to SchoolFood Plus Cafeteria, allowing the “ownership” of the program to reside more closely with SchoolFood.
- **Expansion of SchoolFood Plus Cafeteria** in terms of the number of recipes offered, the growing number of participating cafeterias, the frequency of SFP recipes being placed on menus and being served, the chef tasting events and other social marketing activities.
- **Food Service staff training**, which expanded and improved at a new dedicated facility in Queens, and which became institutionalized as SchoolFood adopted SFP training about seasonings, presentation, and knife skills into its regular system-wide staff training curriculum.
- The design and implementation of a **tracking system for the service of SFP recipes**. This system, developed jointly by FoodChange and SchoolFood staff, provides timely data about the frequency of SFP recipes being placed on menus and how often the recipes are actually being served.
- **Local procurement**, which built on the work of NYSDAM and took a major step forward through the hiring of Karp Resources in December 2005. Increased interest and then assistance by SchoolFood accelerated the process, which was particularly important given the reduction of DOD Fresh resources to NYC. The local procurement team developed new strategies, with an overall focus of working within SchoolFood’s existing *budget*, within the existing *purchasing structure* of distributors, brokers, and suppliers and within the existing *product portfolio* of those foods that SchoolFood buys today and has expressed interest in buying in the near future. Perhaps most importantly, success in purchasing locally grown foods for the summer meals program and the attention given the effort on both a local and national level increased the interest of SchoolFood leadership and set the stage for greater success in the future.
- **EATWISE**, which moved far beyond being an after school club at one high school and began taking shape as the city-wide youth movement envisioned by FoodChange. School year and summer internships gave minority youth exposure to food systems issues while developing their leadership skills. The EATWISE students became engaged in the national dialogue about food security.
- The ongoing popularity of **Cookshop[®] Classroom**, which reached nearly 450 additional children and which doubled in intensity as all students received the year-long curriculum, with the number of lessons going from 1,323 to 3,328. The program received consistently high praise from participating teachers, school coordinators, and principals.

- The transition of Vegetable of the Month[®] to **Cookshop[®] for Adults**, which aligned this adult nutrition education program more closely to FoodChange's signature offering and which reflects the projected expansion of VOM to include grains, fruits, and legumes in addition to vegetables.
- The integration of Farm to Classroom, a **school gardening** curriculum complementary to Cookshop[®] Classroom created through the collaboration of FoodChange and the nonprofit group Added Value at PS 15 in Red Hook, as well as an **after-school** version of Cookshop[®] Classroom implemented with TASC (The After School Corporation).
- **Food and Fitness Councils**, which encountered success in the four intensive model schools and, most importantly, became the model for the new DOHMH Wellness Committees that will be implemented in dozens of schools over the coming years. FoodChange played an important role in assisting DOHMH design the Wellness Committees and will serve as an ongoing resource to DOHMH in providing training and support for the committees. This serves as another good example of an unanticipated outcome of the SFP work and a positive result from the partnership development process.
- **Positive responses to SchoolFood Plus** as the program became more well known throughout the school system. This came about in part because of better communication about the program from FoodChange and increasing promotion of SFP by SchoolFood.
- **Replication of the SFP approach** by SchoolFood in other arenas. While not a direct outcome of SFP, these new collaborations reflect the same concerns and opportunities that are the focus of SFP. For example, SchoolFood and Greenmarket are developing a pilot project in the South Bronx focused on getting locally grown organic foods into elementary school cafeterias. SchoolFood and the Culinary Institute of America have instigated a partnership around developing new entrée recipes that will be cooked within school cafeterias.
- Implementation of **outcome research**, including development of the digital photography methodology for plate waste analysis which proved to be a powerful mechanism for assessing consumption of SFP recipes. With the evaluation renewed for SY 2006-07 by August 2006 and the IRB approvals all in place, true pre- and post-test conditions will be achieved in SY 2006-07.

The analysis of both the plate waste study and the knowledge, attitude and behavior (KAB) surveys showed modest but interesting results. One important finding is that many students are not being served the SFP recipes even when they are being cooked in the cafeterias. Clearly, students cannot increase their recognition of and then consumption of SFP recipes if those recipes are not being placed on lunch trays. Overall, consumption of the SFP recipes studied was very limited. Among the three recipes studied, children were most likely to eat the most simply prepared recipe with the fewest ingredients (Steamed Broccoli and Roasted Cauliflower) and least likely to eat the most complex recipe (Summer Corn, Zucchini, Tomato and Basil Stew).

Throughout SY 2005-06, the program experienced leadership upheaval, which began early in the school year and continued through the end of the evaluation period. Insufficient resources to hire additional program staff had both positive and negative effects. On the positive side, the other primary partners became more engaged in program leadership. SchoolFood embraced the SchoolFood Plus effort and strongly promoted the work of SFP. The five primary partners

operated less as a single leadership unit and more as subsets of two or three members of the partnership coming together around particular issues. On the negative side, some aspects of the Initiative did not come to complete fruition, particularly the coalition work.

Numerous lessons were learned that can be applied to future years and similar initiatives. Foremost is the reaffirmation that trust is the cornerstone of partnership, and trust-building takes time, particularly when it involves people or organizations that recently were adversaries. FoodChange and SchoolFood made tremendous strides over the course of the year to reverse their previous adversarial history, made possible in part by the management changes at FoodChange and by accomplishments on the programmatic level.

The local procurement effort made strong advancements during the year, both in terms of developing viable strategies for introducing local foods into the school system and in actually purchasing local foods.