

Appendix A: Overview of Data Collection and Analysis

Exhibit A-1: Research Questions, Outcome Measures, Data Sources, and Planned Analysis			
Research Question	Outcome Measure	Data Source	Analysis
(A) Increased consumption of fruits and vegetables			
1. What is the level of intake of fresh fruits and vegetables eaten by children through the FFVP? At school? And, in total, of fresh fruits and vegetables (including outside of school hours on school days)?	Mean servings consumed of fresh fruits & fresh vegetables--at school; over 24 hours	Diary/Interview: What, how much, when, where consumed (pp. 6-14) School Food Service Manager (SFSM) Interview: Sections B, C, D and E	Tabulations; by student characteristics
2. What is the impact of FFVP participation on the consumption of fresh fruits and vegetables by children during the school day, overall, and by demographic subgroup, and time of day? If so, what are the quantitative (e.g. MyPyramid equivalents) and relative percent changes?	Mean servings consumed of fresh fruits & fresh vegetables--at school (morning, lunchtime, afternoon); over 24 hours	Diary/Interview: What, how much, when, where consumed (pp. 6-14) SFSM Interview: Sections B, C, D and E	Regression discontinuity analysis; subgroups by student characteristics
3. Does nutrition education and/or nutrition promotion (as currently available at school and other venues) play a role in changing children's consumption of fresh fruits and vegetables, modifying fresh fruit and vegetable consumption in response to the FFVP and in generating other observed outcomes? To what extent?	Mean servings consumed of fresh fruits & fresh vegetables--at school; over 24 hours	Diary/Interview: What, how much, when, where consumed (pp. 6-14) SFSM Interview: Sections B, C, D and E SFA survey: Q T4 Principal survey: Qs N1-8	Tabulations, Exploratory regressions
4. What impact does the FFVP have on the usual level of student intake of fresh fruits and vegetables over a 24-hour period on school days? Analyses shall include a breakout of fresh fruits alone, fresh vegetables alone, all fruits alone, all vegetables alone, fresh fruits and fresh vegetables together, and all fruits and vegetables together. Analyses shall also include whether there are differential impacts by student socioeconomic and demographic characteristics.	Mean servings consumed over 24-hour period on school days: fresh fruits; fresh vegetables; all fruits; all vegetables; fresh fruits and vegetables; all fruits and vegetables.	Diary/Interview: What, how much, when, where consumed (pp. 6-14) SFSM Interview: Sections B, C, D and E	Regression discontinuity analysis; subgroups by student characteristics
5. To what extent did the number or types of fruits and vegetables offered and taken (i.e., served to students) in school meals change in participating schools as a result of FFVP participation?	Mean servings fruits and vegetables consumed in school meals	Diary/Interview: What, how much, when, where consumed (pp. 6-14) SFSM Interview: Sections B, C, D and E SFA survey: Q T2	Regression discontinuity analysis

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6. What quantity (per quarter, per school year, and per student) of fresh fruits and vegetables was purchased and what quantity was consumed by students?	Mean amounts of specific fruits and vegetables consumed	Diary/Interview: What, how much, when, where consumed (pp. 6-14) SFSM Interview: Sections B, C, D and E SFA survey: Q X2 State survey: Q F10	Tabulations
7. What is the relationship of the specific fruits and vegetables offered and the characteristics of the FFVP delivery (method, timing, location, frequency, etc...) to (1) changes in the HEI-2005 and its components, (2) changes in inadequate and excessive nutrient intake, and (3) changes in consumption within the AMDR's (Acceptable Macronutrient Distribution Range)?	Mean HEI score, component scores; Percentage of children above/below AMDRs	Diary/Interview: What, how much, when, where consumed (pp. 6-14) SFSM Interview: Sections B, C, D and E SFA survey: same as Research Questions 19 and 20, below.	Tabulations; Exploratory regressions
8. What proportion of children in FFVP schools participated (i.e., obtained and consumed fruits and/or vegetables)? With what frequency?	FFVP participation: Ever participate; frequency of participation	Student self-administered survey, Q16 a-d	Tabulations
9. How does FFVP participation vary in response to the specific fresh fruit(s) and vegetable(s) offered?	FFVP participation: Ever participate; frequency of participation	Student self-administered survey, Q16 a-d SFA survey: Q S5	Tabulations; Exploratory regressions
<i>Various questions involving food consumption</i>	Usual intake calculated/adjusted using information on frequency of consumption of certain foods	Student self-administered survey, Qs1-14	Tabulations; Regressions
<i>Various</i>	Demographic characteristics	Diary: Gender, Age, Grade (p. 2) Student self-administered survey , Qs 23-25 Parent survey: Qs 12-17	Tabulations, Regressions
(B) Other dietary changes, such as decreased consumption of less nutritious foods			
10. What is the impact of FFVP on children's consumption of foods other than fruits and vegetables? What foods are replaced? To what extent are they replaced?	Mean servings consumed over 24-hour period on school days of other food groups (not fruits and vegetables)	Diary/Interview: What, how much, when, where consumed (pp. 6-14) SFSM Interview: Sections B, C, D and E	Regression discontinuity analysis
11. What is the impact of FFVP on the degree to which total consumption below, at, or above FNS' school meal guidelines and other standards (such as, Dietary Guidelines for Americans (DGAs) or MyPyramid levels)?	Percentage of children above/below: FNS school meal guidelines; DGAs, MyPyramid level	Diary/Interview: What, how much, when, where consumed (pp. 6-14) SFSM Interview: Sections B, C, D and E	Regression discontinuity analysis

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12. What is the impact of FFVP on total consumption above, at, or below the relevant Dietary Reference Intakes for Americans, and on the HEI-2005, on inadequate and excessive nutrient intake, and on consumption within the AMDRs (Acceptable Macronutrient Distribution Range)?	Percentage of children above/below DRSS; Mean HEI score, component scores; Percentage of children above/below AMDRs	Diary/Interview: What, how much, when, where consumed (pp. 6-14) SFSM Interview: Sections B, C, D and E	Regression discontinuity analysis
13. What was the impact of the FFVP on the types of foods offered in vending machines and in other venues in schools?	Reported current levels and recent changes in types of foods offered in vending machines, bake sales, a la carte	SFA survey: Q T3 Principal survey: Qs C1-3 Environmental audit: Qs C1-2	Tabulations
14. What was the impact of FFVP participation on the range of choices in vending machines and other venues in schools?	Current range of choices and recent changes in vending machines, bake sales, a la carte	SFA survey: Q T3 Principal survey: Qs C1-3 Environmental audit: Qs C1-2	Tabulations
15. What was the impact of the provision of fresh fruits and vegetables on the quantity of food purchased from other venues (e.g. – vending machines, bake sales, a la carte sales, etc...) and consumed by children?	Current and two years prior dollar value of foods purchased from vending machines, bake sales, a la carte over comparable 3-month period	SFA survey: Q T3	Tabulations
(C) Such other outcomes as are considered appropriate by the Secretary			
16. What is the impact of FFVP participation on perceptions of, attitudes toward, familiarity with, and preferences for, fresh fruits and vegetables among children in participating schools?	Indices of perceptions, attitudes, familiarity, preferences regarding FFVP	Student self-administered survey, Qs 15, 17-22	Regression discontinuity analysis
17. For children that typically did not participate, why not?	Reasons for nonparticipation	Student self-administered survey, Q16 e	Tabulations
18. At FFVP schools, how do characteristics of regular FFVP participants compare to those of occasional participants and to those students who rarely participate? Never participate?	FFVP participation: Ever participate; frequency of participation	Student self-administered survey, Q16 a-d	Tabulations; by student characteristics
19. What are the methods of fresh fruit/vegetable distribution for the fresh fruit and vegetable program in schools (e.g., kiosk, classroom, mid-afternoon snack, etc.)? What percent of schools use each method? What is the frequency of use of each of these distribution methods? How many schools use multiple methods of distribution? What are the combinations of multiple methods, and what is the frequency of use of each of these combinations?	Modes and combinations of modes of distribution	SFA survey: Q S3 Environment assessment: Q A2 SFA survey: Qs F1, T1, T5, S1-2 State survey: Qs B14, B16	Tabulations
20. What fruits and vegetables are offered through FFVP? How frequently are each of these foods offered? How many schools offer multiple choices of foods on a school day? What is the frequency of use of the common combinations of multiple foods?	Frequencies of <ul style="list-style-type: none"> offering specific foods numbers of choices per day common combinations of foods offered per day 	SFA survey: Qs F3, S2, S5, S7-9	Tabulations

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21. What are the distribution patterns of fresh fruit/vegetable offerings in participating schools (days per week, time of day, duration, frequency, and exposure of fresh fruits/vegetables offerings)?	FFVP distribution characteristics, as listed	SFA survey: Q S4 Environment Assessment: Qs A10-11, A14-17, A25-26	Tabulations
22. How many schools offer FFVP at multiple times during the school day? What is the frequency of use of the common combinations of multiple times of food offering?	Frequencies of times of day, combinations of times of day	SFA survey: Q S4	Tabulations
23. At FFVP schools, what is the distribution of locations for offering FFVP foods? How many schools offer FFVP foods at multiple locations in the school? What is the frequency of use of the common combinations of multiple locations for offering FFVP foods?	Frequencies of locations, combinations of locations	SFA survey: Q S3 Environment Assessment: Qs A2-8	Tabulations
24. What products (e.g., types of fresh fruits and vegetables) are provided, offered, and consumed through the FFVP?	Specific fruits and vegetables provided, offered, consumed	SFA survey: Q S5 Environmental Audit: Qs A9, A12, A18-24 SFSM survey: Qs E3, E6	Tabulations
25. The FFVP encourages participating schools to partner with non-Federal entities to promote successful implementation. What proportions of FFVP schools have non-Federal partners, who are these partners, what is the distribution by number of partners?	<ul style="list-style-type: none"> • Use of non-Federal partners • Types of non-Federal partners • Numbers of non-Federal partners 	SFA survey: Qs F2, 2a, N10 Principal survey: Q F1 State survey: Q C17	Tabulations
26. What roles do the partners play in promoting the goals of FFVP, and what level of resources are they providing to each school?	<ul style="list-style-type: none"> • Partner roles • Partner resources 	SFA survey: Qs F2b, N10a Principal survey: Q F2 State survey: Q C17a	Tabulations
27. What level of nutrition education or other promotion accompanies the FFVP in participating schools? Does this represent a change from prior to FFVP implementation?	<ul style="list-style-type: none"> • Characteristics of nutrition education • Reported changes in nutrition education in since FFVP 	Principal survey: Qs N1-9 Environmental Audit: Qs A13, B8-10, B15 SFSM survey: Q 29 Teacher survey: Qs 20-21 State survey: Q B15	Tabulations
28. What are the costs of implementation (e.g., labor, storage, products especially food, supplies, etc.)?	Mean total implementation costs and components	SFA survey: Qs X1-2 State survey: Qs F1-5, F10, D18-19	Tabulations

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29. To what extent was the FFVP favorably viewed by parents, school administrators and teachers, and school food service staff?	Overall level of satisfaction for each group	Parent survey: Qs 1-2, 5-11 Principal survey: Qs O1-10, O11a-e, O11i-l Teacher survey: Qs 1-8, 13-19, 22-25, 26b-g, 2j, 27 SFA survey: Qs F4, O1-6, O11-14, O15b-c, g-n, O16 SFSM survey: Qs 1-8, 13-28, 30b-g, j-k, m-n, 31 State survey: Qs A10-13, F8-9	Tabulations
30. To what extent are specific fresh fruits and vegetables offered through FFVP favorably viewed?	Level of satisfaction with specific fruits and vegetables for each group	Parent survey: Qs 3-4 Principal survey: Qs 11f-h Teacher survey: Qs 9-12, 26a, h-i SFA survey: Qs S6, O7-10, O15a, d-f SFSM survey: Qs 9-12, 30a, h, i, l	Tabulations
31. What was the impact of FFVP participation on the number of school meals served (NSLP and SBP)?	Current and two years prior numbers of SBP and NSLP meals served over comparable 3-month period	SFA survey: Qs M1-2 Environment Assessment: Qs B1-7, B11-14, B16-21	Tabulation
32. Is [the number of school meals served (NSLP and SBP)] affected by the particular fresh fruit or vegetable offered through FFVP?	<ul style="list-style-type: none"> • Number of SBP meals served • Number of NSLP meals served 	SFA survey: Qs M1-2 Assisted dietary recalls	Tabulations and exploratory regressions
33. What are the characteristics of the schools in each State that applied to participate in the FFVP for School Year?	School characteristics: grade range, enrollment, urban/ suburban/ rural, census region, percent FRPSL, racial /ethnic composition	State databases + Common Core Database for 16 States State survey: Qs A1-9, F6-7	Tabulations
34. For the School Years 2009-10 and 2010-11, what are the characteristics of the schools that were selected in each State to participate and how do they compare to those that were not selected? To other schools in the State or district?	School characteristics as above	State databases + Common Core Database for 16 States	Tabulations

Exhibit A-2: Planned Data Collection			
Source	Mode	Sample	Topics
States	Administrative data (supplemented by Common Core Data)	16 States	<ul style="list-style-type: none"> Description of schools applying and selected for the FFVP FFVP implementation costs (detail for sample schools)
	Web survey	All 54 State Agencies	<ul style="list-style-type: none"> Description of FFVP selection process and criteria, summary data on results State policies, recommended practices, curricula and materials, and oversight Programs for purchase of foods for the FFVP Non-Federal partners FFVP implementation costs (State totals including State administration)
School Food Authorities	Web survey	SFAs responsible for 704 (256+448) selected schools Some separate modules for FFVP schools	<ul style="list-style-type: none"> Satisfaction with the FFVP and specific fruits/vegetables FFVP distribution: methods and locations, days per week, time of day, duration, frequency FFVP foods offered Non-Federal partners (district level) Changes to SBP and NSLP menus SBP and NSLP meal counts Vending machines and other competitive food sales by school food service
School principals	Web survey	Regression discontinuity (RD) sample of FFVP and comparison schools, N=256 Supplementary sample of FFVP schools, N=448 Some separate modules for FFVP schools	<ul style="list-style-type: none"> Satisfaction with the FFVP and specific fruits/vegetables Non-Federal partners (school level) Nutrition education and promotion Vending machines and other food sales competing with school food service
School environment	Observation, including photographs	RD sample of schools, N=256	<ul style="list-style-type: none"> FFVP distribution Presentation of fruits and vegetables served at school breakfast and lunch Nutrition education and promotion
School food service managers	Interview/Self-administered questionnaire	RD sample, N=256	<ul style="list-style-type: none"> Satisfaction with the FFVP and specific fruits/vegetables <i>Data for days of visit:</i> FFVP foods offered SBP and NSLP menus
Teachers	Cover sheet questionnaire for parental releases	Three per school in RD FFVP school sample, N=384	<ul style="list-style-type: none"> Satisfaction with the FFVP
Students	Interview Food diary/assisted recall; self-administered questionnaire	24 per school in RD analytic (final) sample, N=6,144	<ul style="list-style-type: none"> Demographic characteristics FFVP participation Reasons for nonparticipation Perceptions, attitudes, familiarity, preferences regarding the FFVP All foods/drinks consumed during sample 24-hour period: description, time, place, amount
Parents	Cover sheet questionnaire for consent form	24 per school in RD analytic (final) sample, N=6,144	<ul style="list-style-type: none"> Satisfaction with the FFVP Student demographic characteristics