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Importance of Child Nutrition Programs to Agriculture

Food Assistance Research Brief

Kenneth Hanson, khanson@ers.usda.gov, (202) 694-5427

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Issue: USDA's child nutrition programs generate additional food consumption, which increases production, value added, and jobs on U.S. farms. Farm "value added" is a measure of labor earnings and the returns to farm ownership. This research brief estimates program-specific impacts for the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), the Child and Adult Care Food Program (CACFP) and a combined group of "school programs" (the National School Lunch, School Breakfast, Special Milk, and Summer Food Service Programs).

Findings: Estimated impacts depend in part on the program's additionality—the amount by which a dollar of program spending results in additional food consumption. Two

cases are examined that differ in their treatment of additionality in WIC. Case 1 uses a value of zero, based on a single study for WIC that did not find any additionality. Case 2 adopts an alternative figure of 26 percent, based on additionality values for the Food Stamp Program. A program's estimated additional food expenditures, reported in the first row of table 1, depends on its additionality and its 2001 funding level. Table 1 also reports the estimated impacts.

Under Case 1, child nutrition programs increase farm production by \$1,035 million (0.4 percent of farm cash receipts). Farm value added—labor earnings and the returns to farm ownership—increases by \$318 million. Additional farm labor is roughly 9,200 jobs; in comparison, there were about 2 million farm jobs in 2001.

Table 1. Farm sector impacts from child nutrition programs, \$ millions and number of jobs

	Program specific additional food expenditures					
	Case 1			Case 2		
	School Programs ¹	CACFP ²	WIC Zero add	Case 1 Total	WIC 26% add	Case 2 Total
Additional food expenditures, \$ million	1,969	376	0	2,344	782	3,126
Farm production (cash receipts), \$ mil.	870	166	0	1,035	435	1,470
Livestock and poultry	284	54	0	338	40	377
Dairy	222	42	0	264	224	488
Crops	364	70	0	434	172	605
Fruits and vegetables	130	25	0	155	13	168
Other crops (mostly food and feed grains)	235	45	0	279	158	437
Farm value added (inc. depreciation), \$ mil.	267	51	0	318	128	446
Livestock and poultry	48	9	0	57	7	64
Dairy	36	7	0	43	37	80
Crops	183	35	0	218	84	302
Fruits and vegetables	68	13	0	81	7	88
Other crops (mostly food and feed grains)	115	22	0	137	77	214
Farm jobs, number of jobs	7,738	1,476	0	9,214	3,870	13,084
Livestock and poultry	2,524	483	0	3,007	352	3,359
Dairy	1,972	375	0	2,346	1,992	4,338
Crops	3,242	619	0	3,861	1,527	5,387
Fruits and vegetables	1,154	221	0	1,375	120	1,495
Other crops (mostly food and feed grains)	2,087	398	0	2,485	1,407	3,892

Data source: USDA-ERS calculations.

¹School Programs include National School Lunch Program, School Breakfast Program, Summer Food Service Program, and Special Milk Program

²Child and Adult Care Food Program (CACFP)

Table 2. Child nutrition program additional food expenditures in 2001

	Total cost ¹	Food cost ²	Case 1 ³	Case 2 ⁴
-----\$ million-----				
Child Nutrition Programs	14,101	7,784	2,344	3,126
School Programs	8,213	3,942	1,969	1,969
National School Lunch Program (NSLP)	6,475	3,108	1,399	1,399
School Breakfast Program (SBP)	1,450	696	508	508
Summer Food Service Program (SFSP)	272	131	59	59
Special Milk Program (SMP)	16	7	3	3
Child/Adult Care Food Program (CACFP)	1,739	834	376	376
WIC	4,150	3,008	0	782

¹Total program expenditures: USDA-FNS program data, www.fns.usda.gov/pd/annual.htm

²Food cost is the program expenditure on food purchases plus donated commodities, estimated.

³Additionality by program is: 0.45 for NSLP, SFSP, SMP, and CACFP, 0.733 for SEP, 0.0 for WIC.

⁴26 percent additionally for WIC, plus the additionality for other programs from case 1.

The table also distributes total farm-sector effects across commodities. For example, in Case 1 school programs and CACFP generate production of \$602 million for dairy and meat producers (combined) and \$155 million for fruit and vegetable producers. Two factors help explain why the impact on dairy and meat producers is relatively high. First, dairy and meat products account for 44 percent of food purchases for school meals while fruit and vegetables account for 24 percent. Second, dairy and meat products have relatively high farm cost shares while the cost of farm commodities account for a relatively small share of the cost for processed fruits and vegetables, and processed fruits and vegetables account for 75 percent to 80 percent of all fruits and vegetables.

Under Case 2 with 26 percent additionality for WIC, the child nutrition programs increased farm production by \$1,470 million, or \$435 million more than under Case 1. Added farm jobs rise by nearly 4,000 to a total of 13,084. WIC's biggest impact is on dairy production (\$224 million, over half of \$435 million) because dairy accounts for close to 60 percent of WIC food purchases either directly or indirectly (through infant formula). WIC's effect on other crops is due primarily to feed grains.

Background and Methods: Table 2 reports that 2001 expenditures by child nutrition programs were \$14,101 million, of which an estimated \$7,784 million were for food purchases assuming 48 percent of total school program expenditures were for food, including donated commodities (USDA-FNS, 1994). For WIC, food costs are reported in the program data (USDA-FNS, October 2002). Each program's additional food expenditures are the product of food expenditures and a program's additionality—a measure of added food consumption generated by a program after netting food that would have been consumed anyway. A review of the literature suggests an additionality of 45 percent for NSLP, 73 percent for SBP, and zero for WIC (Devaney and Fraker, 1989; USDA-FNS, 1987a,b). Given an absence of studies for the other school programs, we assign them the 0.45 percent additionality of the NSLP.

It was supposed that the Special Milk Program purchases fluid milk only. Food item purchases by the other school programs and CACFP were derived from the *School Food Purchases Study* (USDA-FNS, 1998). WIC food expenditures were taken from the *FY 2000 WIC Food Package Cost Analysis* (USDA-FNS, 2002).

Given the additional food purchases by the child nutrition programs, we estimate the farm impacts in terms of production (cash receipts), value added and jobs. We assume the food purchases are at wholesale prices, which are lower than the retail prices households pay for the same food items. The farm cost share for each food item is the direct farm impact from the additional food demand. The cost shares are derived from the input-output accounts. Input-output analysis estimates the indirect impact on farms, taking into account that the production of farm commodities involves the use of other farm commodities, e.g., feed grains are used in livestock and dairy production. For more information on the use of the input-output analysis, see USDA-ERS *Briefing Room: Food and Nutrition Assistance Program and the General Economy*.

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