Chapter III

PROGRAM PARTICIPANTS

Most of the food assistance programs administered by the Food and Nutrition Service (FNS) are means tested, and some are targeted toward particular segments of the low-income population. For example, some programs serve only older persons, while others address the needs of pregnant women and infants. The Food Distribution Program on Indian Reservations (FDPIR) is unique in that it is targeted to residents of rural Indian reservations, primarily American Indians.

We have discussed some characteristics of the FDPIR target population in the preceding chapters. Low-income American Indians share many of the same problems facing other persons who live in the rural United States, such as declining job opportunities. The Bureau of Indian Affairs (BIA) estimated 775,329 Native Americans to be living outside Alaska in 1987.[1] Based on this population estimate, one-third (32.7 percent) received food stamps and approximately 17.3 percent received commodities through FDPIR.[2] Given that as many as *half* of this group were receiving food assistance under one program or the other, the extent of need among American Indians is widespread.[3] Therefore, it is important to learn more about the households and individuals being served by FDPIR so that the program can address special, and perhaps diverse, needs of participants effectively.

This chapter is divided into sections that address two broad sets of issues. The first section provides a demographic and socioeconomic profile of households and individuals who received commodities in September 1989, with the focus on characteristics that may be related to their level of need, such as employment status, educational attain-

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[1]This estimate is drawn from a report by the Bureau of Indian Affairs, Indian Service Population and Labor Force Estimates, January 1987, Table 1.

[2]The estimate of American Indian food stamp participants is based on tabulations from the 1986 food stamp Quality Control data base. The estimate of FDPIR participation is the average monthly number of participants for fiscal year 1987.

[3]As we discuss in Chapter IV, approximately 11.5 percent of the households receiving commodities in September 1989 had received food stamps within the past 12 months; therefore, the two estimates cannot simply be summed to yield an unduplicated count of American Indian households that received assistance under one or the other program.

ment, and access to transportation. The second section examines dietary needs and food preferences among program participants. The survey conducted for this study provides new information about the need for special diets and the prevalence of nutrition-related health problems among FDPIR participants, and the acceptability of specific items available through the program.

A. A PROFILE OF FDPIR HOUSEHOLDS AND PARTICIPANTS

The analysis of patterns of participation in public assistance often focuses on the composition of participant households. For example, the high incidence of female-headed households in the Aid to Families with Dependent Children (AFDC) program has focused attention on problems such as adolescent pregnancy that tend to increase participation by this segment of the population in that program. Similarly, certain groups' overall level of participation in transfer programs, such as older persons in the Food Stamp Program, has been examined by researchers and policy analysts to assess whether specific barriers to participation exist for them.

Given the lack of information about households and individuals who receive commodities under FDPIR, we recognized that it would be helpful to have more basic information about their characteristics. To obtain this information, we collected data from two sources about households that received commodities from FDPIR during September 1989, the reference month for the study. The first source was the case record of each of 827 households selected for this study. The other source of data was a survey in which interviews were conducted with respondents representing 757 of those households.

By design, the collection of data from these two sources was complementary. Consistent with the information requirements of the FDPIR eligibility determination process, household case records contain fairly detailed information about financial circumstances, but very little information about individual household members other than their ages. As a result, we conducted the survey of FDPIR households to provide more detailed information about each household member, relationships among the members, and household circumstances related to the need for food assistance.

The following profile of FDPIR participants draws information from both data sources. It is divided into five topical areas—household size and composition, characteristics of individual participants, economic status, housing, and transportation.

Household Size and Composition

The concept of a "household" under FDPIR refers to a group of individuals who normally purchase food and eat together, and whose financial and other circumstances meet the eligibility criteria of the program. It is possible, therefore, for more than one FDPIR household (or a FDPIR household and a non-FDPIR household) to occupy the same residential unit.

On the basis of data obtained directly from FDPIR participants in the household survey, we determined that persons not included in the FDPIR case record (which defines the composition of the FDPIR household) lived in about five percent of the sample households. These persons were reported to be purchasing food and preparing meals separately from the group of persons who constituted the FDPIR household. As such, they were not counted by FDPIR certification specialists in establishing the household size on which FDPIR benefits were allocated.

Given the different manner in which household composition was recorded in the case record, the survey report provided a more complete depiction of the composition of households in which one or more members received assistance from FDPIR in September 1989. For example, whereas the case records indicated that nearly one-third of participant households (32.6 percent) contained only one person, responses to the survey suggested that approximately one-fourth (23 percent) of the households actually consisted of persons who lived alone. In our discussions below, we base our findings related to household size on these survey report data.

As shown by Exhibit III.1 (again, based on the survey data), one-person households constituted the largest segment of the FDPIR caseload. Approximately one in five households in the survey had two members, and one-third had three or four members. Nearly one-fourth of the FDPIR households who were interviewed had five or more members.

This distribution of household sizes is not readily comparable to that for other programs because those data also omit household members who do not receive program benefits. However, the average of 3.2 members per FDPIR household compares to 3.5 members for all low-income families in the United States in 1987.[4] Also, only half of the

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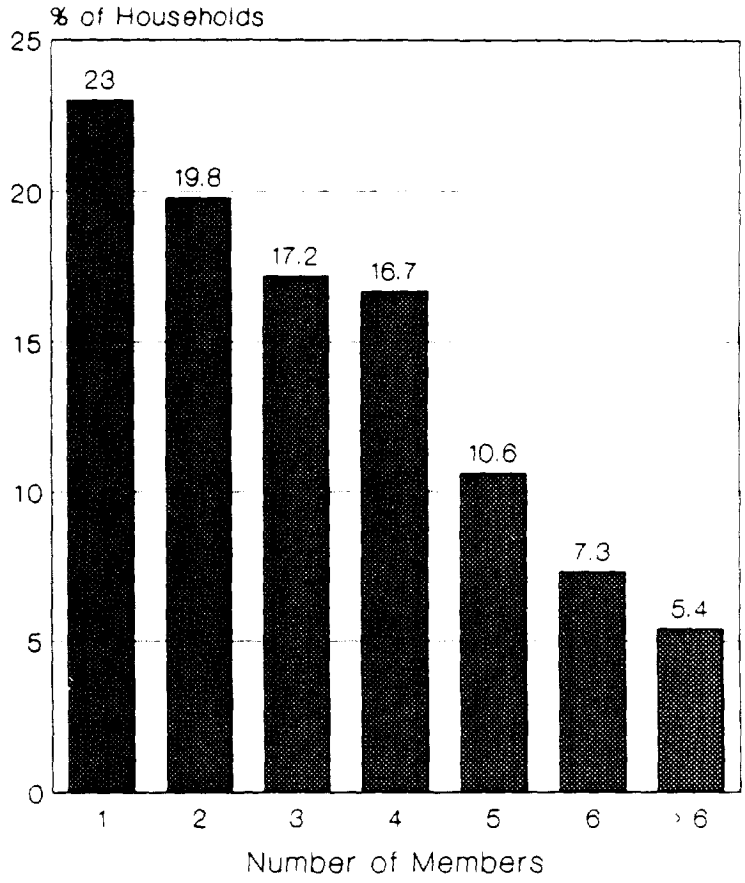
[4]100 percent of the Federal Poverty Guidelines, U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-60, No. 163, Poverty in the United States: 1987 (Washington, D.C.: U.S. Government Printing Office, 1989), p. 113.

Exhibit III.1
Size of FDPIR Participant Households



Sample of 757 survey households.

sample households contained children, compared to 78.1 percent of all low-income families.[5] As we discuss below, this points to an important pattern of participation in FDPIR.

The data in the first column of subtotals in Exhibit III.2 show that nearly two-thirds of the households included in the survey sample contained a male adult and a female adult, referred to in the table as "couples." Survey data describing the relationships of household members to the respondent (typically the FDPIR applicant) indicate that about two out of three couples were married, and that married couples were present in 41 percent of FDPIR households. This pattern is very similar to the pattern found among all low-income

[5]Bureau of the Census, Poverty in the United States, p. 91.

families in 1987 in that nearly 44 percent of them included a married couple.

Column 2 of Exhibit III.2 indicates that 50 percent of the sample households included children. Most of these children lived in households with couples (81 percent of all households with children).

Exhibit III.2

Household Composition of Sample FDPIR Households (N = 757)

Household Characteristics	Percentage of Each Household Type		
	1	2	3
COUPLES:	63.8		
With Children		40.7	
Married			31.9
Not Married*			8.8
Without Children		23.1	
Married			9.2
Not Married*			13.9
SINGLE ADULTS:**	36.2		
With Children		9.5	
Females			8.5
Males			1.0
Without Children		26.7	
Females			15.0
Males			11.7
TOTALS	100.0	100.0	100.0

*These households include cases in which a man and woman were living as husband and wife, though unmarried, and cases of a mother and an adult son, or a father and adult daughter living together. It was not possible to determine the nature of the relationships between unmarried adults on the basis of the survey data.

**This household category includes one or more adults of the same sex living together.

The households labeled "single adults" contained either male or female adults but not both. Single-adult households with children made up 9.5 percent of the total sample. Further, most of these single-parent households had female heads (8.5 percent of the total sample).

Among all low-income families in the United States, 46.7 percent are single-parent, female-headed households. Given the prevalence of this type of household among the low-income population, the rate of 8.5 percent among FDPIR households is unexpectedly low. Part of the reason, as we discuss later in the chapter, is a strong tendency among families receiving AFDC to participate in the Food Stamp Program rather than FDPIR. As a result, households without children constituted a substantial segment of the FDPIR caseload.

To extend the analysis of household size and composition, we consolidated some of the categories shown in Exhibit III.2 to form four subgroups:

- **Couples (married or not) with children.** This group includes all households with an adult female, an adult male, and one or more children, accounting for 40.7 percent of all households.[6]

- **Couples (married or not) without children.** Households with an adult male and an adult female present but no children represented 23.1 percent of the sample. Again, unmarried couples could involve a variety of relationships.

- **Single parents, their children, and other adults of the same gender.** Single parents (a male or female adult with one or more children living with them) represented 9.5 percent of households. These households could also include other adults, all of the same gender.

- **Single adults.** These households (26.7 percent of the sample) contained single adults living alone or two or more adults of the same gender living together without children.

A breakdown of household size for these groupings provides a better characterization of household composition. For example, Exhibit

[6]Recall that approximately one-fourth of this group does not involve a married couple. It was not possible to determine the nature of the relationship between unmarried adults on the basis of the survey data.

Exhibit III.3

Size and Composition of FDPIR Households (N = 757)

Composition of Household	Percentage of Each Household Size			
	1 or 2 Members	3 or 4 Members	5 or More Members	All Household Sizes
Couples With Children	NA	20.0	20.6	40.7
Couples Without Children	14.1	8.2	0.9	23.1
Single Parents	2.5	5.1	1.9	9.5
Single Adults*	26.2	0.6	0	26.7
All Household Types	42.8	33.9	23.4	100.0

*This household category includes one or more adults of the same sex living together.

III.3 reveals that the vast majority of large households (those with five or more members) is made up of couples with children. In contrast, most single-parent households had fewer than five members. Also, while couples without children accounted for one-third of the small households (with one or two members), most of the small households were single adults who lived alone or with other adults of the same gender. In fact, although not shown in the table, 85.8 percent of the singles households were persons living alone.

A substantial proportion (38.9 percent) of all FDPIR households include an older person. This is significant because only 15.9 percent of low-income families in the general population have an elderly householder.[7] Also, as we discuss in Chapter IV, only 20.5 percent of the households participating in the Food Stamp Program in 1987

[7]Bureau of the Census, Poverty in the United States, p. 83.

included an elderly member.[8] Given the extent of participation by this group, therefore, it merits further analysis.

Responses to the survey indicate that elderly FDPIR participants fall into three categories:

- single elderly (persons who live alone);
- multiple elderly (groups of two or more elderly persons who live together); and
- elderly persons living with non-elderly persons (persons who live in a household with persons younger than 60 years of age).

Exhibit III.4 shows that more than one-third of the elderly households in FDPIR were persons who lived alone (this number represents 14.2 percent of all sample households). A smaller percentage of elderly households (13 percent) were those households in which more than one elderly persons live. Fully 88 percent of this group was made up of couples without children living with them. Finally, half of the FDPIR households that included an elderly member, also included non-elderly members. Nearly half of this group were couples without children, although the category could include an elderly parent and an *adult* child of the opposite sex, or married couples in which one spouse was younger than 60. The next largest subgroup—elderly person(s) living in a household with a couple with children—suggests that between one-tenth and one-fifth of the elderly households involve an extended family living together.

One conclusion drawn from the survey data is that 38.9 percent of FDPIR households included elderly persons, half (49.6 percent) of these same households included only elderly persons, and the great majority of these households were persons living alone. As we discussed in Chapter II, many programs made special efforts to serve this population by making home deliveries and taking applications by mail. Unlike others in their age cohort who lived with non-elderly persons, the single elderly may require such assistance, and given that they constituted approximately one-fifth of the caseload in September 1989, the potential administrative effort to serve them is substantial.

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[8]Food and Nutrition Service, Office of Analysis and Evaluation, Characteristics of Food Stamp Households: Summer 1987, Alexandria, VA, January 1990, p. 82.

Exhibit III.4

Composition of FDPIR Households Containing a Person Aged 60 or Older

Composition of Household	Number and Mix of Elderly and Non-Elderly Members (% of approximately 294 sample households with an elderly member)			
	Single Elderly	Multiple Elderly	Elderly w/ Non-Elderly	All Elderly Households
Couples With Children	NA	0	18.0	18.0
Couples Without Children	NA	11.2	23.8	35.0
Single Parents	NA	0	4.1	4.1
Single Adults*	36.6	1.8	4.4	42.8
All Household Types	36.6	13.0	50.3	99.9

*This household category includes one or more unrelated adults of the same sex living together.

Characteristics of Individual Participants

Program data indicate that an average of 138,048 individuals in 44,962 households received commodities during any given month in FY1989.[9] In addition to providing information about households, data from the survey offer some insight concerning the characteristics of individual members of these households. In the following sections, we review a range of demographic and socioeconomic characteristics of individual FDPIR participants.

Gender and Age. The individuals who participated in FDPIR during September 1989 were evenly divided by gender, with 50.5 percent of them being female. As indicated in Exhibit III.5, adult male participants tended to be younger than adult females (mean age of 42 versus 46), generally reflecting the larger number of female-headed households, including elderly women who lived alone.

[9]FNS, Number of Households Certified and Participating and Number of People Participating in the Food Distribution Program on Indian Reservations (FNS-152): FY-89—September 1989, Run Date: 12/20/89.

Exhibit III.5

Percentage of FDPIR Participants by Gender and Age (N = 2,441)

Age Group	Male	Female	Total
Less Than 18	19.8	17.2	37.0
18 - 39	15.4	15.3	30.7
40 - 59	8.2	9.3	17.5
60 or Older	6.1	8.7	14.8
All Ages	49.5	50.5	100.0

Education. Adult female and male participants (18 years or older) also do not appear to differ with regard to their level of education. Males had completed an average of 10.2 years of school while women averaged 10.0 years. Approximately one-fourth of male and female adults had less than nine years of education, and approximately one in ten had less than six years of education. About one in ten of the adult males (10.9 percent) and 13.4 percent of adult females had some education or training beyond high school.

Based on data from the 1984 wave of the Survey of Income and Program Participation (SIPP), educational attainment among FDPIR participants is very similar to the level among food stamp participants.[10] More than half (54 percent) of the food stamp participants identified in that research had not completed high school.

Primary Activity During Survey Month. To determine the types of activities being pursued in the survey month by FDPIR participants, we asked respondents to describe the activities of each member of

[10]Following our specifications, Mathematica Policy Research conducted an analysis of the 1984 SIPP Wave 3 data base; the results are summarized in Charles L. Usher *et al*, Long Term Participation in the Food Stamp Program by Work Registrants. Final Report, Volume I. Research Triangle Park, NC: RTI/3943-32/FR-03, September 29, 1989.

their household aged 16 or older.[11] To provide comparability with another survey being sponsored by USDA, the response codes conformed to those used in the Continuing Survey of Food Intakes by Individuals.

Exhibit III.6 shows that approximately one-fourth of the adult FDPIR participants were working during September 1989.[12] Approximately one in six participants was looking for work or had been laid off from a regular job. In all, then, over 40 percent were either working or looking for work. Nearly one-fourth of the adult participants (21.9 percent) were retired or disabled, and 5.7 percent were attending school. Finally, the primary activity of more than one in four participants was described as "keeping house."

The patterns of activity for men and women differ primarily in terms of the proportion who were looking for work or had been laid off a job, and the proportion whose primary activity during the survey month was keeping house. As Exhibit III.7 shows, the largest group of men (29.4 percent) was working, while about one-fourth (25.4 percent) were looking for work or had been laid off. While a relatively large proportion of women were working outside the home (22 percent), the primary activity of the largest segment (41.9 percent) was keeping house, and fewer than ten percent had been laid off or were looking for work. More than one-fourth (26.2 percent) of the male adult participants were retired or disabled, compared to 14.1 percent of the women.

The age of participants was related to the activities in which they were reportedly engaged in September 1989. Among the elderly, for example, the data in Exhibit III.8 show that only six percent were working and 1.4 percent were laid off or looking for work. The largest group of them (39 percent) were described as retired and 19.7 percent were disabled. Most of the remaining elderly (30.6 percent)

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[11]Five percent of the household members aged 16 or older were 16 or 17 years old, and 92.7 percent were reported to be in school.

[12]More than one person was working in 10.1 percent of the households included in the survey.

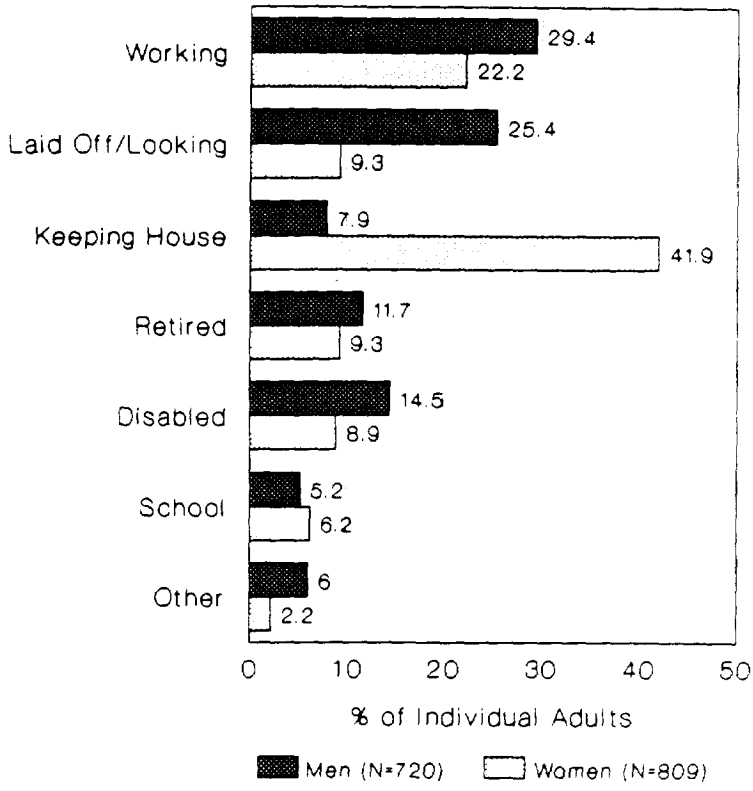
Exhibit III.6
Primary Activity of FDPIR Participants
During Survey Month

were described as keeping house.[13]

The group most likely to be employed in September 1989 were persons aged 30 to 59. One-third of this group were working compared to 26.9 percent of the younger adults aged 18 to 29. Consistent with this finding, the youngest adults were those most likely to be looking for work or to have been laid off (27.9 percent). Although a fairly substantial percentage (15.1 percent) of this group were attending school, the data on activities suggest that problems of unemployment may affect younger adults more than older adults.

[13]Although it is not possible to ascertain from the data, the distinction between retirement and keeping house for elderly participants may refer simply to the activity of persons who were formerly employed outside the home and retired from that work. Persons who had not worked outside the home and continued to fulfill the same responsibilities as they became older may not consider themselves to be "retired."

Exhibit III.7
Primary Activity of Adult Male and Female Participants



Economic Status

Household Income. Consistent with the income-eligibility guidelines established for FDPIR, income levels for the sample households were very low. In fact, the data in Exhibit III.9 (taken from the case records of 827 sample households) indicate that one-third of the households actually had a gross income equal to 50 percent or less of the poverty level established for 1989, and more than half had income no greater than 75 percent of poverty.[14] One in five households that participated in FDPIR in September, 1989, had gross income that placed them above the poverty level, but only 4.3 percent of the sample households had gross incomes that exceeded 130

[14]The data reported in Table III.9 are based on income shown in the FDPIR case record and the household size reported in the survey. Persons who were reported to be purchasing food and preparing meals separately were not counted in establishing the size of each household.

Exhibit III.8

Primary Activities of Individual FDPIR Participants by Age (N = 2,441)

Primary Activity in September	Percentage of Participants by Age Group		
	18 - 29	30 - 59	60 or More
Working	26.9	34.2	6.0
Laid Off or Looking for Work	27.9	18.2	1.4
Keeping House	21.9	25.7	30.6
Retired	0	2.6	39.0
Disabled	2.6	12.5	19.7
Attending School	15.1	3.1	0.3
Other	5.6	3.7	3.0
All Activities	100.0	100.0	100.0

percent of poverty.

This level of poverty existed in spite of the fact that, as shown in Exhibit III.10, one-third of the households that received FDPIR commodities in September 1989 had earnings (wages or income from self-employment).[15] An additional 3.9 percent were receiving unemployment benefits related to recent employment. An equally large group of households (35 percent) had retirement income from Social Security, a pension, or the Veterans Administration. Thus, 29 percent of all households received a Social Security benefit and 3.4

[15]Recall that about one-fourth of all adult FDPIR participants reported being employed during this same month. These apparent differences in reporting rates are due to the fact that the employment rates are reported for individual participants while the earnings rates are based on household units. In fact, among 24 percent of the households with earnings, more than one adult was reported to be working.

Exhibit III.9

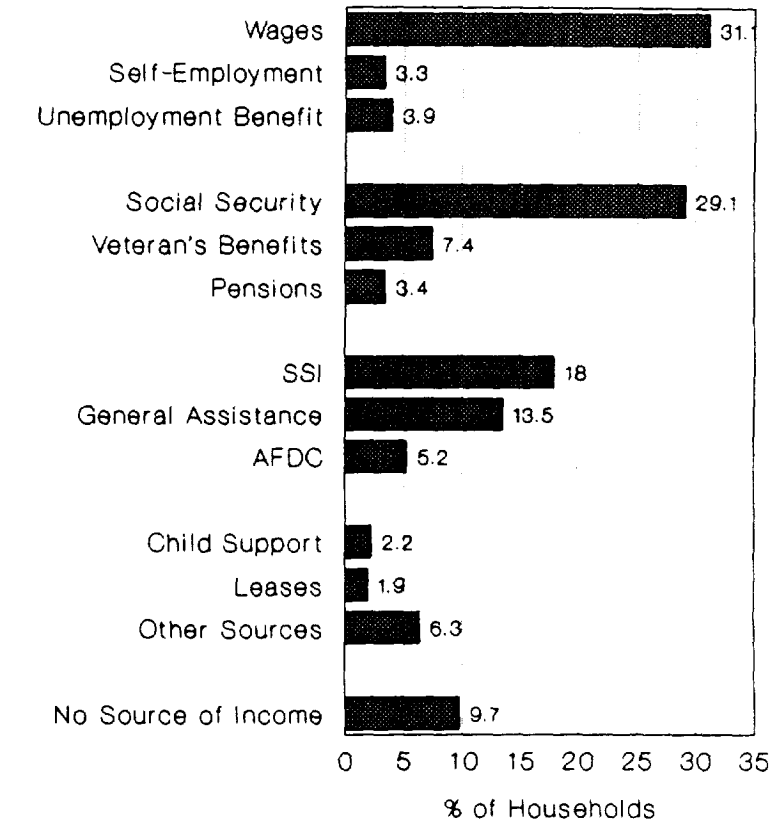
Gross Income of 827 Sample FDPIR Households
as a Percentage of the Poverty Level

Percentage of Federal Poverty Guidelines	Percentage of All Households	Cumulative Percentage
25% or Less	17.6	17.6
26 - 50%	16.5	34.1
51 - 75%	21.8	55.9
76 - 100%	24.1	80.0
101 - 130%	15.7	95.7
> 130%	4.3	100.0

percent had pension income. The military service of some FDPIR participants was reflected in the receipt of veteran's benefits by 7.4 percent of the households.

In spite of the generally low levels of income for FDPIR households, participation rates in income assistance programs are relatively low. Only 31 percent of the sample households received welfare payments; that is, income from AFDC, Supplemental Security Income (SSI), General Assistance, or some combination. In fact, 18.0 percent of the participating households were receiving SSI and an even smaller segment of the caseload (13.5 percent) received General Assistance payments through the Bureau of Indian Affairs or State welfare agencies. Finally, in sharp contrast to the Food Stamp Program, in which approximately 40 percent of the participating households receive AFDC, only 5.2 percent of FDPIR households received payments from this program. As we noted above and discuss in detail in Chapter IV, this result reflects an important pattern of food assistance program participation for American Indian households and is explained largely by program cross-referral patterns at the point of program application.

Exhibit III.10
Sources of Income Among FDPIR Participant Households



Sample of 827 case records.

In addition to employment-related income and support from income assistance programs, a few FDPIR households had income from child support payments (2.2 percent), leases of tribal-owned land (1.9 percent), and other miscellaneous sources (6.3 percent). It also is notable that the FDPIR case records of nearly one in ten households (9.7 percent) reflected no income. However, in comparing the characteristics of these households with the remainder of the caseload, we did not find any significant differences.[16] The most likely explanation for this is that in FDPIR, as in other assistance programs, some participants report having no income at the time of application or recertification because they have just become unemployed or their

[16]This comparison involved a wide array of characteristics, but it was constrained by the small segment of the sample (fewer than 75 households) it entailed. Nevertheless, the findings across the different variables did not point to a possible pattern that might merit further investigation.

application for cash assistance is being processed.[17] This is not to deny that some of these households, in fact, experience a long-term lack of income. But, records at a given point in time also reflect households' transient economic circumstances.

Exhibit III.11 shows some clear patterns in the relationship between household composition and sources of income. First, it indicates that the type of household most likely to have earnings is couples with children. Wages were shown in the case records of more than half of this group. Second, Social Security, SSI, and General Assistance were the most common sources of income for couples without children and singles. Given the prevalence of elderly households among both groups, this pattern was to be expected. Third, again not surprisingly, AFDC was most commonly found among single-parent households. However, as we discuss below, the pattern of income for this group was quite diverse.

While a single-parent household could receive income from earnings, Social Security, and AFDC, only one-fourth of these households in the study sample received AFDC payments. In fact, as many single-parent households received Social Security benefits (most likely for a parental death benefit) as AFDC (both 24 percent), and more (27.6 percent) had earnings. These results suggest that this group of single parents does not conform to a typical pattern of welfare dependency. As we discuss in Chapter IV, many American Indian AFDC households also choose to participate in the Food Stamp Program rather than FDPIR. As a result, these single parents in FDPIR may represent the segment of this group that is able to rely more on Social Security, child support, and income from employment.

Financial Assets. The impoverishment of FDPIR households is reflected in their level of liquid assets as well as their income. More than three-fourths of the household case records (78.6 percent) indicated no cash on hand and 72.4 percent showed no liquid assets of any kind when they applied for assistance or were last recertified. As Exhibit III.12 shows, the case records of only 3.3 percent of FDPIR sample households indicated total assets of $500 or more. Among the households that had liquid assets, more than half (56.1 percent)

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[17]Six percent of the households receiving food stamps in 1987 reported not having any income; see FNS, Characteristics of Food Stamp Households: Summer 1987, p. 42. Also recall that in FDPIR a household may be certified for one month pending receipt of information documenting their financial circumstances. As a result, information in some cases may simply not have been entered in the case record.

Exhibit III.11

Sources of Income by Composition of Household and Mean Monthly Income (N = 827)

Composition of Household	Percentage of Households with Given Sources of Income					
	Earnings	Social Security	SSI	General Assistance	Veteran Benefit	AFDC
Couples With Children	52.2	13.5	6.5	6.9	3.3	7.2
Couples Without Children	18.0	40.5	28.0	19.7	11.4	0.9
Single Parents	27.6	24.0	13.2	10.2	4.5	24.0
Single Adults	8.8	44.7	28.7	20.1	13.2	NA
All Households	31.3	29.1	18.0	13.5	7.4	5.2
Mean Income	$827	$385	$270	$165	$346	$284
Standard Error	$31	$22	$14	$21	$24	$28

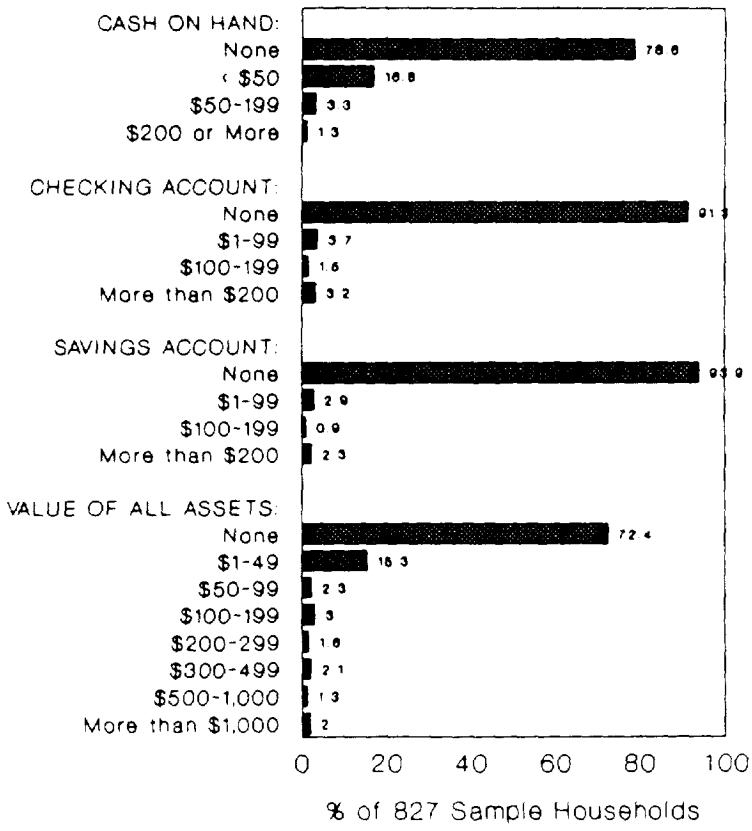
had less than $50, typically in a checking account or cash in hand. Thus, the financial assets of these households were far below the asset limits established for FDPIR eligibility (that is, $1,750 for households that do not include a person aged 60 or older, and $3,000 for households with an elderly member).

Housing Arrangements

Given the generally scarce economic resources of FDPIR participants, housing expenses could impose serious limitations on meeting other household needs, including food. Exhibit III.13 indicates that nearly half (48 percent) of the households participating in FDPIR during September 1989 either owned their homes or lived in them rent-free. One-third of the households occupied rental units, and the remainder were in the process of buying their homes. The average rental or house payment for households in these two categories was $122 per month.

The chart also reports the mean monthly gross income of households in each housing category. It is not surprising to see that the house-

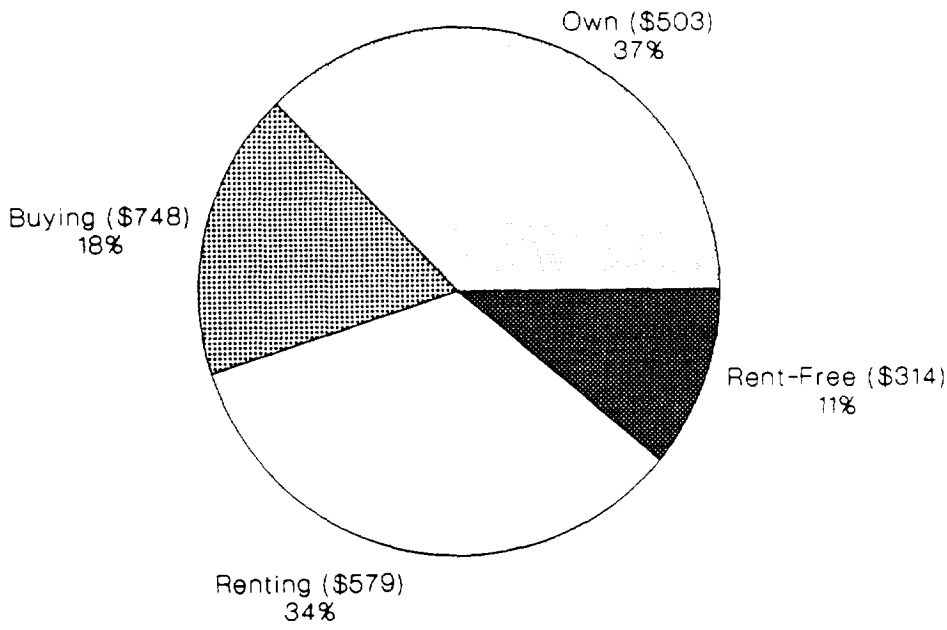
Exhibit III.12
Liquid Assets of FDPIR
Participant Households



holds that were purchasing homes had the highest level of income, averaging $748 per month gross income. Renters had the second highest level of income with $579 per month. Persons who owned their home had somewhat lower levels of income, averaging $503. Finally, households that did not own a home, but lived rent-free under some ther unspecified arrangement had the lowest level of average monthly gross income, $314.

Housing costs also can be viewed as a percentage of gross income that is devoted to this purpose. Among households that had to pay rent or a mortgage payment, this expense consumed an average of 21 percent of their gross income. Nearly three out of four of these households (71 percent) paid less than 25 percent of their gross

Exhibit III.13
Housing Arrangements and Mean Gross Income of FDPIR Participant Households



income for rent or mortgage payments.[18] For seven percent of these households, however, the cost of housing represented half or more of their gross income.

Only five percent of the sample households reported that they received housing assistance in the form of cash or vouchers. However, many tribes operate housing programs under which tribal members are able to rent or buy homes at reduced cost. Therefore, the cash or voucher subsidization understates the extent of housing assistance received by FDPIR households. In fact, if this were not the case, it would be even more difficult for many of these households to buy a home or to keep housing costs to such a low percentage of their income.

[18]For the most recent available year (1983), $315 was the median rent for rental units and $1,033 was the average monthly income of all U.S. households that rented their homes. Thus, rental costs consumed 30.5 percent of the average household's income. See U.S. Bureau of the Census, Statistical Abstract of the United States: 1988, 108th edition, Washington, DC, 1988.

Exhibit III.14

Housing Arrangements of FDPIR Households Containing a Person Aged 60 or Older

Housing Arrangement	Number and Mix of Elderly and Non-Elderly Members (percentage of all households with an elderly member)			
	Single Elderly	Multiple Elderly	Elderly w/ Non-Elderly	No Elderly
Buying	7.5	6.9	14.0	21.9
Own Home	54.5	72.6	54.5	24.5
Renting	29.1	13.4	22.8	39.8
Rent-Free or Other	9.0	7.2	8.8	13.8
All Arrangements	100.1	100.1	100.1	100.0

Housing arrangements also are related to household composition, especially the presence of an elderly person. Exhibit III.14 shows that households composed only of elderly persons were the least likely types to be buying a home, primarily because more than half of them already owned a home. In fact, nearly two-thirds of the elderly households either owned a home or lived rent-free. In contrast, only one third or so (38.3 percent) of households that did not include an elderly member were in such a position. In considering this finding, however, it is important to emphasize again that all of these households have very low income and these data do not consider the quality of housing available to them.

Transportation

One of the assumptions underlying the establishment of FDPIR was that the remote location of reservations and the wide dispersion of population within them made it difficult for many American Indians to reach grocery stores and public agencies. Also, given their rural location, this group often cannot use public transportation and must rely on private means. In this section, therefore, we examine, first, travel distances to destinations such as the FDPIR distribution point and grocery stores, and second, the means of transportation used by program participants.

Travel Distances. Exhibit III.15 shows the distance *each way* to the sample households' commodity distribution point, food retail outlets, and to the nearest food stamp office. Although there is some regional variation in these travel distances, it is more notable that, for most households, these distances were approximately 10 miles or less.[19] The only exceptions are the longer distances FDPIR households in the Mountain Plains and eastern regions would have to travel to reach the local food stamp office. However, the data for the eastern regions must be interpreted cautiously because of the very small number of cases on which they are based.

Overall, commodities usually could be obtained at a site located six to nine miles from the participant's home. The nearest food store (more often a small grocery or convenience store) was usually within four to five miles of home, whereas buying fresh meat and vegetables required driving to a store four to eight miles away.

In four regions, the commodity distribution point is usually closer to the homes of FDPIR participants than the store at which they buy fresh meat and vegetables. Only in the Southwest does the distribution point tend to be farther away. If FDPIR households were to apply for food stamps, however, the trip would likely be farther away (much farther in the Mountain Plains and eastern regions) than the commodity distribution point.

Although the distances in Exhibit III.15 *average* less than 10 miles each way, some FDPIR participants have to travel long distances to reach the commodity distribution point and food stores. To gauge the extent to which this occurs across regions, we present the percentage of households in each region who had to travel more than 20 miles to these destinations.

The regional variation indicated by the data in Exhibit III.16 is generally consistent with the information presented above in that more households in the West and Mountain Plains Regions have to make these long trips. In fact, more than one-fourth of the households in these regions had to travel more than 20 miles each way to the commodity distribution point, in spite of widespread use of

[19]The median is used as the "average" here. By definition, half of the households traveled less than the median distance and half traveled more than the median distance. As we discuss below, a relatively small percentage of households had to travel great distances. If we used the mean travel distance, these extreme values would have inflated the "average" travel distances we reported.

Exhibit III.15

Median One-Way Distances to Public Agencies and Food Stores For FDPIR Households (in Miles, by Region)

Destination	Distance from Residence, by Region					Average Distance
	Mountain Plains	Southwest	West	Midwest	Northeast/ Southeast	(N = 757)
Commodity Distribution Point	6.9	8.9	7.8	5.7	2.6	7.5
Nearest Food Store	4.7	3.8	5.1	4.8	4.4	4.4
Nearest Store for Fresh Meats/Vegetables	7.5	4.3	8.1	8.1	9.1	6.2
Food Stamp Office	16.3	8.3	10.4	10.8	21.3	11.0

tailgate certification and food distribution systems by programs in those regions. However, in all cases, a larger proportion would have to travel long distances to apply for and be recertified for food stamps.[20]

Many FDPIR participants travel farther than the nearest food store in order to buy fresh meat and vegetables (Exhibit III.15). As indicated in Exhibit III.17, the nearest store for them may be a small grocery or country store, a trading post, or a convenience store where fresh produce is not available. In fact, the nearest store for nearly one-third (31.0 percent) of the FDPIR participants in the West is a trading post or tribal cooperative store. The same is true of one-fourth (25.4 percent) of the midwestern participants.

[20]We should note that participation in the Food Stamp Program usually does not require monthly trips to the food stamp office. Widespread use of mail issuance of food coupons, particularly in rural areas, minimizes the number of trips.

Exhibit III.16

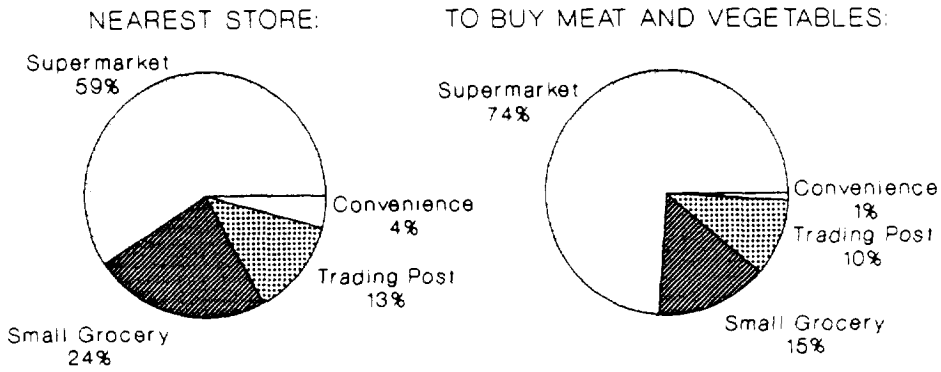
Percentage of FDPIR Households Driving More Than 20 Miles Each Way to Distribution Point and Food Stores, by Region

Destination	Percentage of Households, by Region					Total
	Mountain Plains	Southwest	West	Midwest	Northeast/ Southeast	(N = 757)
Commodity Distribution Point	26.6	21.1	25.5	1.3	5.3	21.4
Food Stamp Office	39.2	15.7	39.5	11.8	42.6	28.7
Nearest Food Store	11.1	2.8	17.7	4.7	5.3	5.3
Nearest Store for Fresh Meats/Vegetables	21.3	5.6	29.5	5.9	21.3	21.3

Means of Transportation. Given the remote places of residence for many FDPIR participants, it is clear that transportation is important to them. As Exhibit III.18 indicates, more than two-thirds of participant households own a car or truck. Also, most either traveled in their family's car to the store (73.0 percent) or to the FDPIR office (70.8 percent), or got a ride with a friend (9.9 percent and 10.0 percent, respectively). About one-tenth of the households had to pay a friend to drive them different places (11.2 percent for shopping and 10.0 percent for recertification). Finally, 4.8 percent reported that they walked to the store the last time they bought food and 4.2 percent said they walked to the FDPIR office the last time they were recertified.[21]

[21]Three-fourths of the trips made on foot to be recertified were no more than one mile. Also, among the group who walked, 30.5 percent reported that their household owned a vehicle.

Exhibit III.17
Food Stores Used by FDPIR Participants



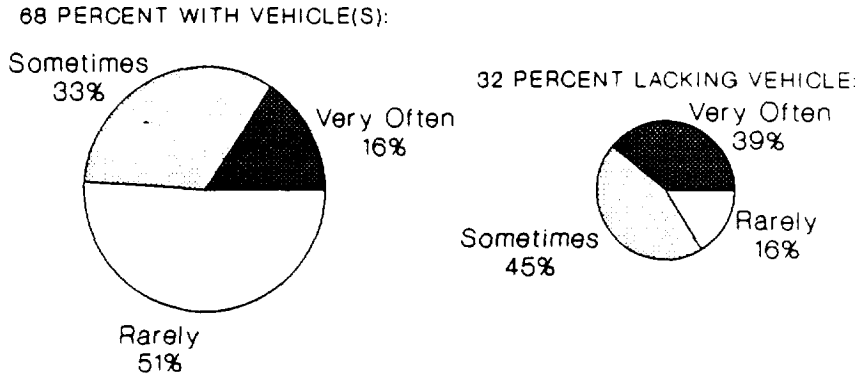
Sample of 757 survey households.

Among the 68.1 percent of households that had a vehicle, only 16 percent very often had difficulty getting where they needed to go because of problems with their cars or trucks. However, more than half (55.1 percent) of all households that owned a vehicle reported that they sometimes could not travel because they lacked money to buy gas. Also, it is worth noting that 9.4 percent of the households that had a vehicle manufactured since 1985 very often had trouble getting where they needed to go, compared to 17.9 percent of the households with older vehicles.

Households without vehicles were much more likely to experience difficulty getting where they needed to go. Thirty-nine (39) percent of this group (12.5 percent of all the sample households) reported that they very often had problems getting where they needed to go because a car or truck was not available, or because they could not get a ride. Also, nearly two-thirds (64.2 percent) said that at least sometimes they lacked money to pay someone to drive them.

Even though many households have vehicles, various economic constraints resulted in nearly one-fourth of all sample households reporting that they very often had difficulty getting where they needed to go. Thus, transportation continues to be a problem for a

Exhibit III.18
How Often FDPIR Households Have Trouble Getting Where They Need to Go



Sample of 757 survey households.

substantial segment of the FDPIR caseload.

B. DIETARY NEEDS AND FOOD PREFERENCES

In this section, we discuss selected nutritional problems of special concern among American Indians, the dietary needs of FDPIR households, and the extent to which the program meets the food preferences of its target population. Specifically, we address the following:

- the nutrition and health context of FDPIR participants by a review of recent food and nutrition research findings concerning American Indians;

- the adequacy of the household food supply, and the perceived food needs of FDPIR participants;

- the special dietary needs of FDPIR households reported by survey respondents; and

- the food preferences described by FDPIR participants.

Nutrition and Health Context of FDPIR

During the planning phase of this evaluation, we conducted a review of the literature concerning food intake and nutritional status among American Indians.[22] Major findings that pertain to food, diet and health are summarized below.

1. High rates of morbidity and mortality among American Indians due to infectious diseases have become less threatening in the last 40 years compared to increasing rates of diet-related chronic diseases, including cardiovascular disease, hypertension and, particularly, diabetes.

2. One in three American Indians is currently reported to be at risk of developing Type II diabetes, and among selected tribes, such as the Pima, the disease is found at a rate of 50 percent of the adult population. While Type I diabetes usually develops during childhood or adolescence and requires lifelong treatment with insulin, Type II diabetes is characterized by adult onset and the presence of obesity which often may be treated with diet and exercise.

3. Several studies of American Indian children on tribal reservations during the past 25 years reported low intakes of energy, calcium, iron, and vitamins A and C. Relatively high rates of anemia (10 to 20 percent) also have been reported among children. However, a gradual decrease in many of these problems is evident during this same time period and may be the result of supplemental commodity food and income transfer programs, as well as a general improvement in socio-economic conditions as measured by improved household conditions (e.g., running water, electricity and refrigeration). Data are not available on the current dietary status of this subpopulation.

4. Heights and weights among American Indian children are lower than those of the white population in the United States, probably due to both nutritional and genetic differences. These children are generally shorter in stature, and slightly lighter in weight when compared to white children of the same ages. However, American Indian children are heavier than the national average when adjusted for height.

5. American Indian women who have been studied over the past 25 years have consistently reported lower dietary intakes of energy, calcium, iron, and Vitamin A than other US population groups. Numerous other nutrients have been

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[22]This review was submitted as part of the project's Data Collection and Analysis Plan (July 26, 1989). In all, 36 journal articles, books and chapters were reviewed. Given that most of these sources were published between 1984 and 1988 (several earlier sources provide historical perspective), they represent the prevailing knowledge on North American Indian nutrition and health status.

reported as being consumed at levels below the Recommended Dietary Allowances (RDAs), and vary from study to study.

6. High rates of overweight and obesity (greater than 120 percent of Ideal Body Weight) among adolescent and adult Americans Indians have been reported, with current estimates of obesity ranging generally from 30 to 60 percent. While obesity was rarely reported in this population 40 years ago, there has been an increasing trend in the prevalence of both overweight and obesity since that time. Based on recent studies, current rates may be closer to the 60 percent rate.

7. The apparent discrepancy between reported low rates of caloric intake and high rates of overweight and obesity have been attributed, at least partially, to a much more sedentary reservation lifestyle than was previously experienced.

8. Traditional American Indian foods have largely been replaced by more processed, commercially prepared food items. Even among the most culturally conservative tribes, such as the Hopi, there is a greatly decreased recognition and use of traditional foods. Importantly, the variety and quality of the diet also has declined, with more limited food preferences being expressed by American Indians than was reflected in earlier, more traditional diets.

9. Previous studies based on data collected in the early 1980s indicated that commodity foods among program participants may contribute up to 50 percent of the intakes of most nutrients except for fat and Vitamins A and C. The reported amount of fat consumed by American Indians attributable to the commodity foods was consistent with the average daily intake of the general US population, while the fat appeared to be primarily saturated. Further, the fiber content of the American Indian diet was lower than the US average, which was considered in itself too low.

10. Recommendations in the literature related to FDPIR were made to: decrease the levels of saturated fat, salt and sugar; increase the levels of fiber, and vitamins A and C; increase the variety of foods offered through the program; and provide nutrition education to all program participants.

In response to these observations and recommendations, a 1985 FNS Task Force analyzed the nutrient profile of the FDPIR food package to determine how well it met participants' nutritional needs. Where the package was not consistent with USDA's Dietary Guidelines for Americans, the FNS Task Force recommended several modifications, which then were made. These changes resulted in a package that is reported to provide appropriate levels of most key nutrients, 101 percent of the RDA's for food energy (calories), with 34 percent of the calories derived from fat.

A recently released GAO report describes requests made by Indian Health Service (IHS) officials and tribal nutritionists to further reduce

fat and sodium content in selected commodity foods.[23] In commenting on the GAO report, USDA noted that in the overall commodity food package, only 34 percent of the calories are derived from fat. There also was a concern that further reducing sodium and fat in canned meats might reduce palatability and would require buying food items at higher cost.

The GAO report also indicated that more nutrition education is needed to help recipients acquire the knowledge and skills necessary to achieve nutritious diets and reduce the prevalence of obesity, diabetes, hypertension and heart disease. USDA noted that it now offers more nutrition education technical assistance than previously, including expanded lending and reference services from the National Agriculture Library, and relevant bibliographies. Improved nutrition education also is promoted by FNS through sharing USDA nutrition education materials and by encouraging local FDPIR programs to coordinate their efforts with other community organizations.

In summary, American Indians face high rates of morbidity and mortality, due in part to diet-related chronic diseases such as Type II diabetes, heart disease and hypertension. While some American Indians may be experiencing insufficient intakes of selected nutrients, many are obese, and obesity is causally linked to these diet-related diseases. Unfortunately, comprehensive studies on the dietary intake and nutritional status of this population are lacking. Although improvements to the FDPIR food package and nutrition education services have been made during the past several years, some Indian health officials still express concern about the nutrient content of selected commodity food items and the need for expanded nutrition education services.

Adequacy of Household Food Supply

In order to examine the adequacy of the household food supply among FDPIR participants, we studied three sets of measures. First, we examined food expenditures according to different patterns of food purchases reported by survey respondents. Second, we identified sources of food that had not been purchased or obtained through FDPIR. Third, through the survey data, we assessed FDPIR households' perceived food needs. The results of these three sets of analyses are described below.

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[23]United States General Accounting Office, Food Assistance Programs: Nutritional Adequacy of Primary Food Programs on Four Indian Reservations. GAO/RCED-89-177, September 1989.

Food Expenditures. The expenditure of household resources on food is one measure of the adequacy of income to meet the nutritional needs of household members. We measured household food expenditures during home interviews by asking respondents to estimate the total amount of money spent by their households at the grocery store during the month of September 1989. Respondents also estimated the amount spent on nonfood items so that the amount spent on food could be calculated. If they considered the amount reported for September to be atypical of their usual monthly food expenditures, respondents were asked to indicate how much they *usually* spent at grocery stores. Finally, we asked respondents how much they spent on food and drinks in restaurants, bars, cafes and other such places, as well as home-delivered and carry-out foods.

Analysis of these data revealed two striking patterns. First, the level of per capita spending for food was strongly associated with patterns of food purchases. Second, households with higher income were more likely to purchase food in restaurants or from take-home or home-delivered sources.

Exhibit III.19 shows that the largest group of sample households purchased food only at grocery stores, and did not go to restaurants or buy prepared foods to take home. This group, which constituted 43.2 percent of the sample, spent an average of $26 per member at the grocery store each month and had the lowest mean gross monthly income, $494. This income was substantially lower than the average income of $578 for all households in the survey sample. These households devoted an average of 16 percent of their monthly income to food purchases.

The next largest group according to patterns of food purchases was households that purchased food at grocery stores and also ate at restaurants. Representing 34.1 percent of the sample households, this group's mean monthly income was $549. Their purchases at grocery stores averaged $28 per household member, while restaurant purchases averaged $10. All told, food expenditures accounted for 21.7 percent of this group's monthly income.

Households that also purchased prepared foods for home consumption or bought home-delivered food tended to have the highest monthly income of any group of households. However, of an average $729 monthly gross income, nearly one-fourth (23.7 percent) was devoted to food purchases. This amounted to $5 per member for take-home and home-delivered foods, $10 per member for food

Exhibit III.19

Monthly Food Purchases For Consumption at Home and Away
by Pattern of Food Purchases

Sources of Food Purchases	Percentage of FDPIR Households (N = 757) (%)	Mean Gross Monthly Income of Households ($)	Percentage of Income Spent on Food (%)*	Per Capita Purchases From Different Sources ($)			
				Take Home	Restaurants	Grocery Stores	Total
Grocery Stores Only	43.2	494	16.0	–	–	26	26
Grocery Stores and Restaurants	34.1	549	21.7	–	10	28	38
Grocery Stores, Restaurants and Take-Home Establishments	12.0	729	23.7	5	10	$28	$44
Grocery Stores and Take-Home Establishments	6.0	625	17.0	5	–	25	30
Other	4.6	657	11.1	4	15	–	$18
Total, All Sources	99.9	578	17.1	1	5	24	31

*Percentage of income spent on food was calculated using case record income data and survey expenditure data. Despite the data collection time lag between these two sets of data, the average percentages across households are useful to describe household subgroups.

eaten at restaurants, and $28 per member for food from grocery stores. This group constituted only 12 percent of the entire sample of FDPIR households.

A small segment of the sample did not report purchasing any food at restaurants, but did buy take-home food. Representing only six percent of the sample, this group had relatively high incomes averaging $625. Their level of per capita spending was $5 for take-home food and $25 for food from grocery stores, which collectively required 17 percent of these households' gross monthly income.

Notably, in all four patterns of food purchases, spending in grocery stores varies by no more than $3 per month per person, despite differences in mean gross monthly income. Variation in food purchases, which is a function of reported income, was introduced by purchases in restaurants and take-home establishments.

An even smaller segment of households reported not spending any money at grocery stores, but only at restaurants and for take-home and home-delivered foods. This group spent the smallest percentage of its income for food (11.1 percent) even though the mean income of $657 was higher than the average for all sample households. Not surprisingly, this group spent more per member at restaurants than any other group ($15), but averaged only $5 for take-home, a level similar to other groups' per capita spending for food from this source.

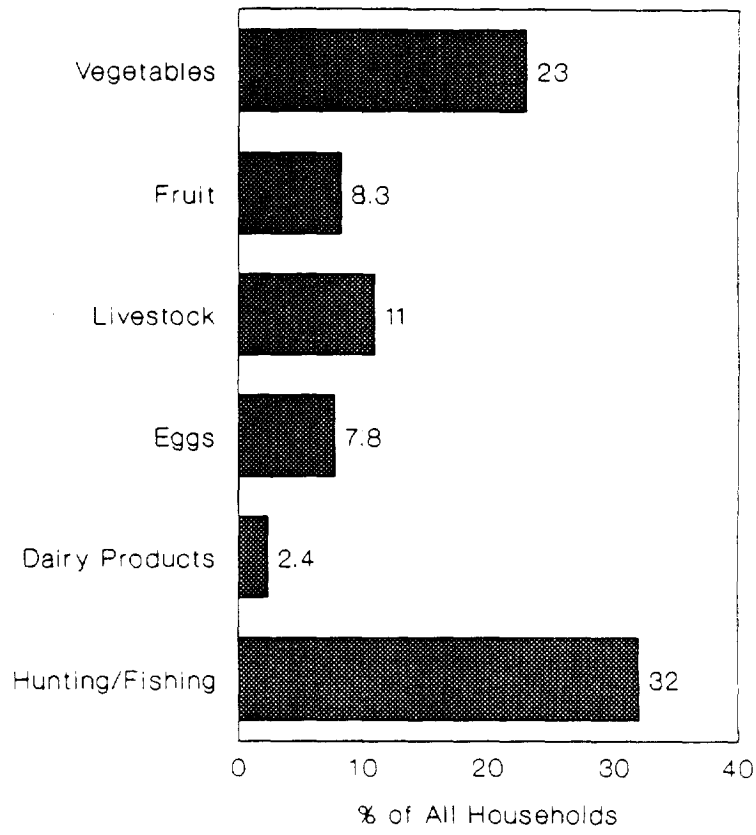
It is interesting that per capita spending for food from different sources did not vary much across different groups of households. Spending for grocery stores, for example, ranged from $25 to $28. Spending at restaurants (for households that ate at restaurants) was typically $10 per member per month. Similarly, spending for take-home and home-delivered foods averaged $5 per person for households that purchased such items.

The patterns of food purchases shown in the exhibit tended to be associated with other household characteristics. Our findings indicate that three household characteristics tended to be positively associated with purchasing food at restaurants and grocery stores rather than grocery stores only. They were (1) the presence of children in the household; (2) the absence of a person aged 60 or older; and (3) earnings in excess of $500 per month. Among households with earnings this high, for example, only 26.1 percent relied solely on grocery stores for purchased foods, whereas 49.6 percent of the households that had lower earnings or no earnings purchased food from grocery stores only.

Other Food Sources. As the data in Exhibit III.20 indicate, a substantial proportion of FDPIR households produce some of their food themselves. One-half of the respondents (50.4 percent) reported producing supplemental foods from at least one of the sources shown in the exhibit. Almost one-fourth of all the FDPIR survey households (23 percent) reported growing vegetables for home use, and in the Southwestern Region, nearly one-in-three households (31.8 percent) reportedly had vegetable gardens. Finally, almost one-third of the

survey households (32 percent) reported using hunting or fishing as a supplemental food source, particularly households in the Midwestern Region (46 percent) and the Mountain-Plains Region (42 percent).

Exhibit III.20
Supplementary Sources of Food for FDPIR Households

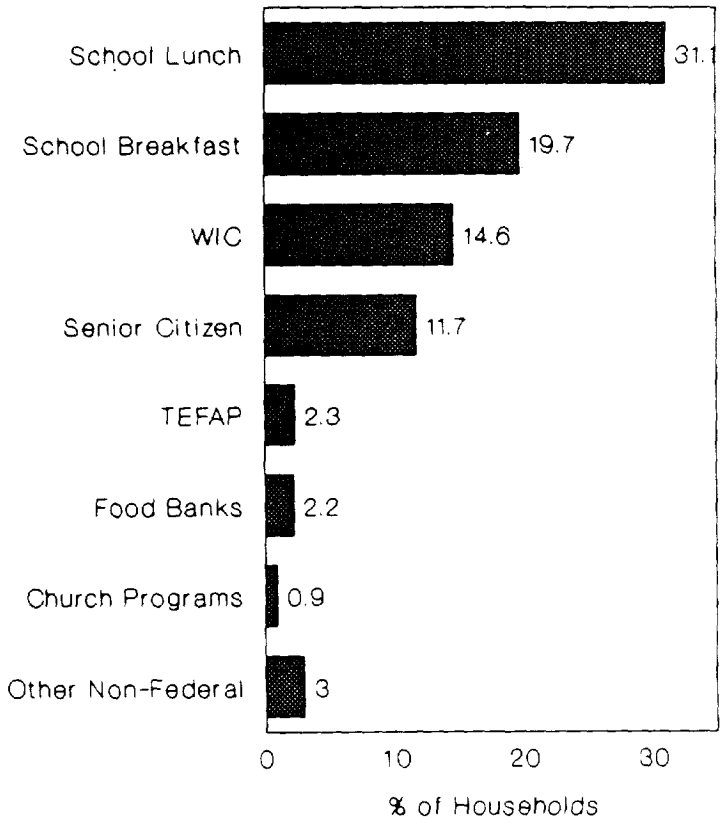


Sample of 757 survey households.

Focus group discussions corroborated these findings. In addition to purchased foods, participants reported hunting and fishing as an important source of supplemental food. Fewer individuals in the focus groups reported growing seasonal gardens, though for at least one of the reservations visited, the geography was not suitable for significant gardening activity; many reservations are located on land that is not arable.

In addition to FDPIR, many households reported receiving food assistance from other programs, including the School Breakfast and Lunch Programs, WIC, elderly feeding programs, food banks, and other non-Federal programs (see Exhibit III.21). In all, 48 percent reported participating in one or more of these programs.

Exhibit III.21
Participation by FDPIR Households in Other Assistance Programs



Sample of 757 survey households.

Approximately one out of three households included a child who received free or reduced-price school lunches, representing 70 percent of the households with school-aged children. One out of five households had a child participating in the School Breakfast Program, but this represented only 44 percent of the households with children in school. Finally, nearly one in six FDPIR households received benefits under the WIC Program, representing 52 percent of the households with a child aged five or less.

Almost 12 percent (11.8 percent) of the FDPIR households reported participating in a senior citizen assistance program, and over one-

quarter (25.9 percent) of all households with elderly members present participated in these programs. A relatively small proportion of households (5.2 percent) received help from non-Federal food assistance programs, such as food banks or church programs.

Perceived Food Needs. FDPIR participants reported their perceived food needs during the household survey and during focus group discussions. Survey respondents were asked to choose the statement that best described the food their household ate in September 1989:

- We had enough of the kinds of food we wanted to eat.
- We had enough food, but not always the kind we wanted to eat.
- Sometimes we did not have enough to eat.
- Often there was not enough to eat.

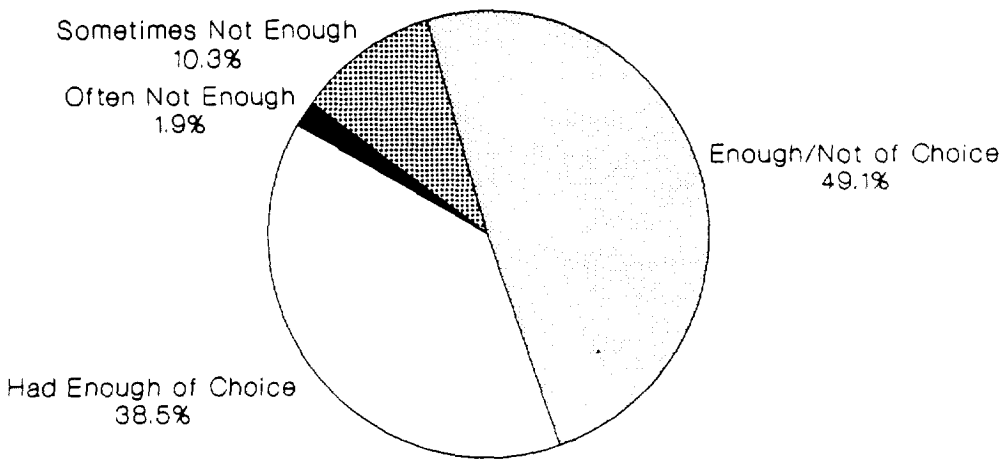
The results of these questions are depicted in Exhibit III.22.

Overall, seven out of eight respondents (87.6 percent) said they had enough to eat. Almost one-half of the study population (49.2 percent) reported that they had enough to eat, but did not always have the kinds of food that they wanted. Another 38.5 percent responded that they had enough of the kinds of foods they wanted to eat. One in eight respondents (12.2 percent) reported that their households sometimes or often did not have enough food to eat.[24]

The respondents who said that they sometimes or often did not have enough to eat also were asked if there were days when their households had no food or money to buy food, and if so, for how many days. Among this group, 80.8 percent (or about 10 percent of the entire sample) responded that their households were without either food or money to buy food for an average of 5.5 days in a typical

[24]This result appears consistent with rates of food sufficiency reported previously within the food stamp population. Twelve percent of a nonmetropolitan low-income sample reported sometimes or often not having enough to eat. See K.S. Tippett et al., "Food and Nutrient Intakes of Low-Income Women and Children, in Metro/Nonmetro Areas, 1985/86," Family Economics Review 3(1):12-15.

Exhibit III.22
Availability of Food During Survey Month
for FDPIR Participant Households



Sample of 757 survey households.

month. In other words, on average, these households did not have enough to eat one day out of every five or six days.

Respondents from this group of households also were asked if household members had to skip meals because of this shortage, and if so, for how many days. Two-thirds of them (representing 8.2 percent of the total survey sample) skipped meals on an average of 4.2 days per month.

In order to describe the FDPIR households reporting insufficient food resources during the survey reference month, we examined a wide range of demographic and socioeconomic characteristics. The most important finding is that 60.6 percent of this group lived in the Western Region. Also, nearly three-fourths (73.5 percent) of all FDPIR households reporting that they had to skip meals "because there wasn't food or money to buy food" were from the Western Region.

As we discuss in sections that follow, households in the West stand out in terms of their lack of resources such as running water and electricity. Also, a larger proportion of households in the Western Region tend to have public assistance income. These characteristics also appear to be more common among all households that reported an inadequate food supply for September 1989. However, we cannot conclude definitely that these factors are, in fact, related to this problem for two reasons. First, due to the size of the survey sample and especially the number of households reporting this problem, it is not possible statistically to state that these characteristics are related to the lack of an adequate food supply. Second, the characteristics of households living in the West also are associated with households reporting a lack of food. Thus, the relative effects of these two sets of factors cannot be disentangled. Therefore, the only conclusion we can confidently draw is that FDPIR households in the Western Region were more likely than those in other regions to report having an inadequate supply of food.

Dietary Needs of FDPIR Households

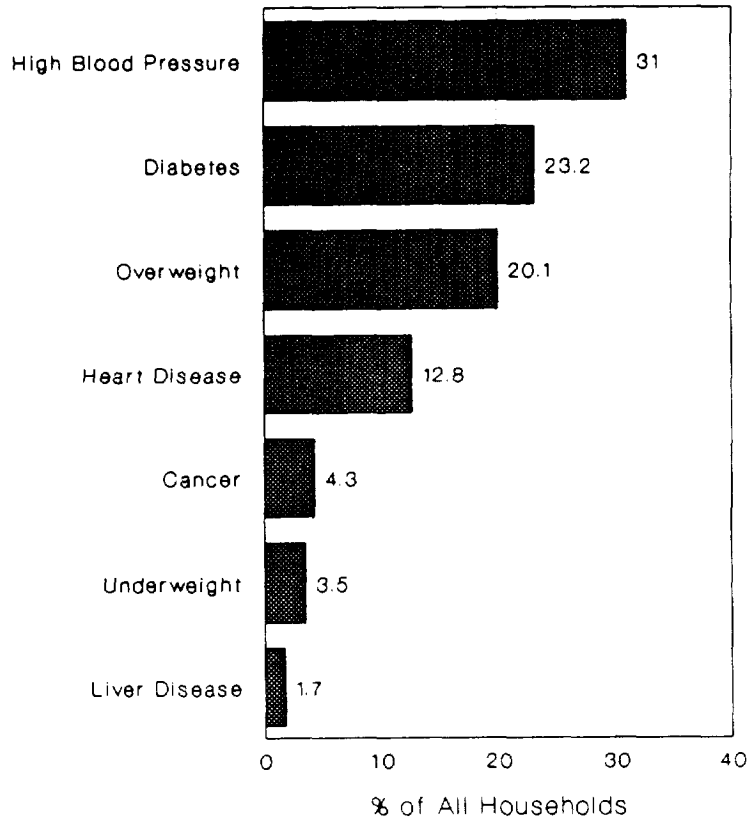
In this evaluation, indicators of the dietary needs of study participants were examined using survey and focus-group data.[25] First, the survey included questions related to family health status and prescribed diets; specifically, whether any member of the household reported having any diagnosed nutrition-related diseases and/or a special diet prescribed by a doctor or other health professional. During focus group discussions, participants were asked about the most prevalent nutrition-related health problems on the reservations, and their recommendations to address these problems. Second, since the ability to meet dietary needs also may be influenced by the adequacy of household food storage and preparation facilities, questions were asked on this topic during the survey and focus group discussions.

Family health status. FDPIR survey respondents were asked if any household members had ever been told by a doctor or other health professional that they had one of seven common nutrition-related health problems. In total, more than half (53.9 percent) of all FDPIR households have at least one adult (over 16 years of age) with one or

[25]Dietary needs refer to the nutritional requirements of the study population, and are differentiated from the broader concept of food needs discussed previously. To assess dietary needs, it is necessary to collect data on the actual dietary intake of individuals, the food practices of households, socio-economic data, anthropometric, biochemical and clinical measures. Such measures were beyond the scope of this study. Instead, we collected self-reported data from participants that serve as indicators of dietary needs.

more nutrition-related health problems.[26] The proportion of households responding affirmatively to this question is summarized in Exhibit III.23. Almost one-third (31 percent) of all households reported at least one person with diagnosed high blood pressure (also described as hypertension), about one-quarter (23 percent) with a member having diagnosed diabetes and one-fifth (20.1 percent) with at least one overweight household member.

Exhibit III.23
Nutrition-Related Health Problems Among
FDPIR Households

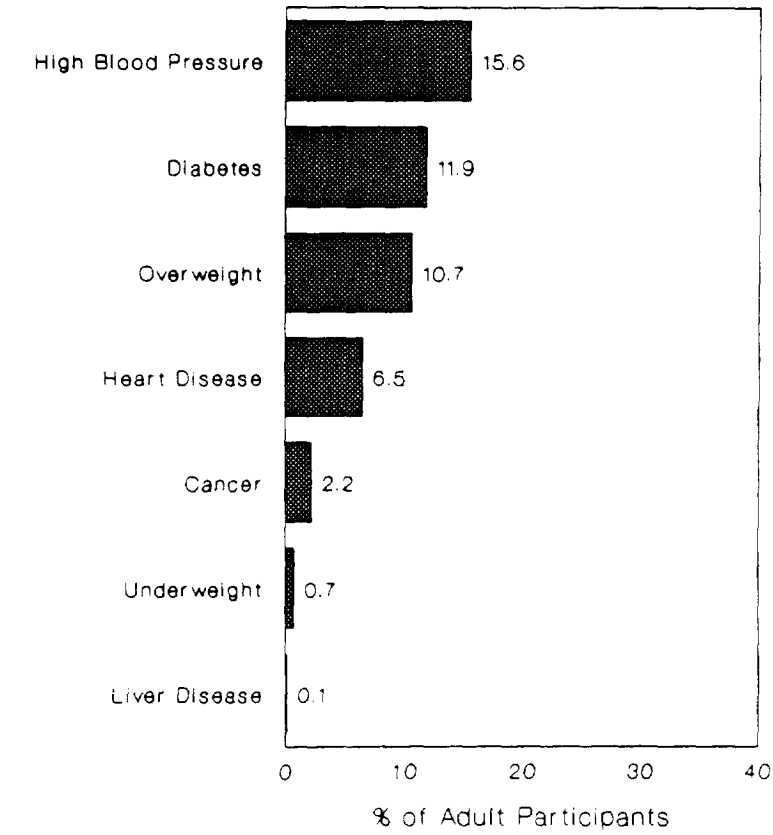


Sample of 757 survey households.

Another means of reporting these data is to examine the reported health problems of *individuals* in the FDPIR household sample who reported having at least one diagnosed nutrition-related health prob-

[26]Consistent with public health reports, we define an adult as being over 16 years of age.

Exhibit III.24
Nutrition-Related Health Problems Among Individual FDPIR Participants



Sample of 1,617 persons over 16.

lem. This approach allows estimates of prevalence rates (e.g., the number of individuals with a specific health problem, per 1,000 individuals in the study population).[27] In all, about 25.7 percent of all adults in FDPIR households had one or more medically diagnosed, nutrition-related health problems. As Exhibit III.24 indicates, high

[27]For ease of presentation, we report our findings as percentages of the study population (per 100 individuals) rather than as prevalence rates (per 1,000 individuals). All figures are reported for adults (over 16 years of age), since adults are the overwhelming majority of individuals reporting these conditions. (Two children in the survey sample were reported to have heart disease, one of these same children had hypertension, and 18 children were reported to be overweight.)

blood pressure was reported at a rate of 15.6 percent of the adult FDPIR household population (all individuals above 16 years of age).[28] Diabetes was reported at a rate of 11.9 percent, obesity was reported at a rate of 10.7 percent of the adult study population, and less than one percent of the adults was reported to be underweight. Diagnosed heart disease was reported among 6.5 percent of the adult population.

Exhibit III.25

Concurrent Nutrition-Related Health Problems
Among Adult FDPIR Participants

Secondary Health Problem	Percentage of Adult Household Members Reporting Primary Nutrition-Related Health Problem*		
	Hypertension	Diabetes	Heart Disease
Hypertension	--	44.9	47.1
Diabetes	34.2	--	34.2
Heart Disease	19.8	18.9	--
Overweight	32.7	33.9	26.5

*Column percentages do not sum to 100% because some individuals are affected by multiple health problems, while others are not.

For those individuals reported to have one nutrition-related health problem, the chances of having one or more recognized additional problems were significant. For example, as shown in Exhibit III.25, among those with hypertension, 34.2 percent also had diabetes, 19.8 percent reported heart disease and 32.7 reported being overweight. Among diabetics, 44.9 percent reported being hypertensive, 18.9 percent had diagnosed heart disease and 33.9 were overweight. Among those with heart disease, 47.1 percent reported having hyper-

[28]A 1985 estimate of high blood pressure in the U.S. general population for all ages is 12.3 percent.

tension, 34.2 percent had diabetes and 26.5 were reported to be overweight.

These same nutrition-related problems were identified by participants in each of the three FDPIR focus groups as health issues of significant concern to their reservations. Further, participants were aware of many of the risk factors related to high blood pressure and diabetes, which includes obesity. While there was a general awareness of these problems and some of their underlying causes, there also were misconceptions and a lack of information related to improving dietary habits. Participants expressed a sense of helplessness regarding effecting necessary changes in their lives and a need for further health and nutrition education. The areas of particular concern to participants were: alternative means of coping with stress; changing negative personal habits which reinforce overeating; and getting family members to provide support for changes in dysfunctional eating patterns. These reported needs go beyond the scope of services provided under current program regulations.

In addition, focus group participants reported that foods recommended by health professionals either were not available or cost too much. For example, lean meats and fresh fruit were considered both expensive and difficult to obtain. Finally, environmental and social factors often reinforced patterns of overeating. To cite one example, all of the communities within which focus groups were held often used food as an important focus for community social events, such as "feasts" and "pow-wows." Many of the foods prepared for these events were fried or were high in fat and refined carbohydrates. Focus group participants reported that such settings make improved dietary behavioral change difficult if not impossible to achieve.

Focus group participants were aware that many individuals within their communities were obese and that this had become a serious problem in recent years. Interestingly, a number of focus group participants viewed themselves as either not overweight or as slightly overweight but otherwise in excellent health, when by observation they were clearly overweight. This apparent discrepancy may reflect two factors at work. First, there is a culturally reinforced opinion among American Indians that a generally heavy physique is an appropriate "healthy" body weight. This opinion may reflect, in part, a theorized physiological predisposition among American Indians to more efficiently store excess energy as fat, resulting not only in

obesity, but also in Type II diabetes and hypertension.[29] Second, this response also may be viewed within the context of a classic underreporting of obesity which is typical of self-reported US survey data.

Systematic, current information on nutrition-related health problems among the general American Indian population with which to compare our results is not available. Instead, we found several recent studies of specific Indian tribes which provide limited and varied prevalence data.

Estimates of diabetes among selected tribes range widely, from about 25 percent among the Apache to over 50 percent among adult Pima Indians. In a 1986 report by the University of North Dakota School of Medicine, approximately one in three US American Indians aged 40 or older was reported to be diabetic.[30] In a recent study submitted for publication, diabetes rates among the North Carolina Cherokee were reported to be 4.8 percent for ages 25 to 45, 25.5 percent for ages 45 through 64, and 29.4 percent for ages over 65.[31] These rates are about five times the US general population rates for ages less than 65 and three times the US rates for ages over 65. In comparison, we found about 12 percent of FDPIR adult members aged 16 or over with diagnosed diabetes.

Recent reports of obesity rates among adult American Indians vary from about 30 percent to over 75 percent on selected reservations. Lee et al. reported that 75 percent of over 1,800 American Indians

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[29]Researchers have suggested that in response to the continual environmental challenges of "feast and famine" in the past, American Indians may have developed a propensity to be at increased risk of obesity and diabetes. Called the "thrifty gene" theory, these researchers have speculated that survival may have depended, in part, on the body's ability to rapidly store fat during times of plenty which then enabled it to better sustain prolonged fasting. During modern times, as food has become more abundant, individuals with "thrifty genes" more readily have become obese and prone to Type II diabetes.

[30]Select Committee on Hunger, House of Representatives. Hunger and Nutrition Problems Among American Indians: A Case Study of North Dakota. One Hundredth Congress, First Session, hearing held in New Town, North Dakota, July 10, 1987, US Government Printing Office, 1987.

[31]Dr. Mary Anne Farrell, MD, Indian Health Service Hospital, Cherokee, North Carolina, personal communication, March 1990.

from ten Oklahoma tribes were obese. On average, they weighed 145 percent of Ideal Body Weight.[32] In contrast, 10.7 percent of FDPIR adult participants reported diagnosed obesity, while the rate for the general US adult population is about 25 percent.

Available comparison data on high blood pressure and heart disease are very limited. The most recent reported rates of these diseases among the US general population (for all ages) are 12.3 percent and 7.8 percent, respectively.[33]

Not surprisingly, for two of the three major chronic health problems (e.g. diabetes and obesity, but not hypertension), the self-reported survey figures reported here fall below estimates generated by health officials and researchers. In fact, these low prevalence estimates from self-reported data conform to previous self-reported survey experiences. That is, respondents may be unaware of underlying medical problems or may misinterpret known symptoms. Lower reported rates of diabetes, in turn, may reflect the fact that a clinical test is required and generally is not applied unless there are medical complications suggesting diabetes. Remember that respondents were asked only for health problems that had been confirmed by a health professional. The relatively low rates of reported obesity conform to the cultural and individual biases described above, although its diagnosis is an uncomplicated procedure and should result in relatively higher rates being reported. Finally, higher rates of hypertension may reflect easier diagnostic procedures which are more readily available to the public.

Exhibit III.26 summarizes the proportions of households reporting at least one household member on a special diet prescribed by a health professional. In all, approximately one out of four households participating in FDPIR had at least one member who was prescribed a special diet. These rates are lower than those reported for diagnosed nutrition-related health problems, though certainly they are not insignificant in scale.

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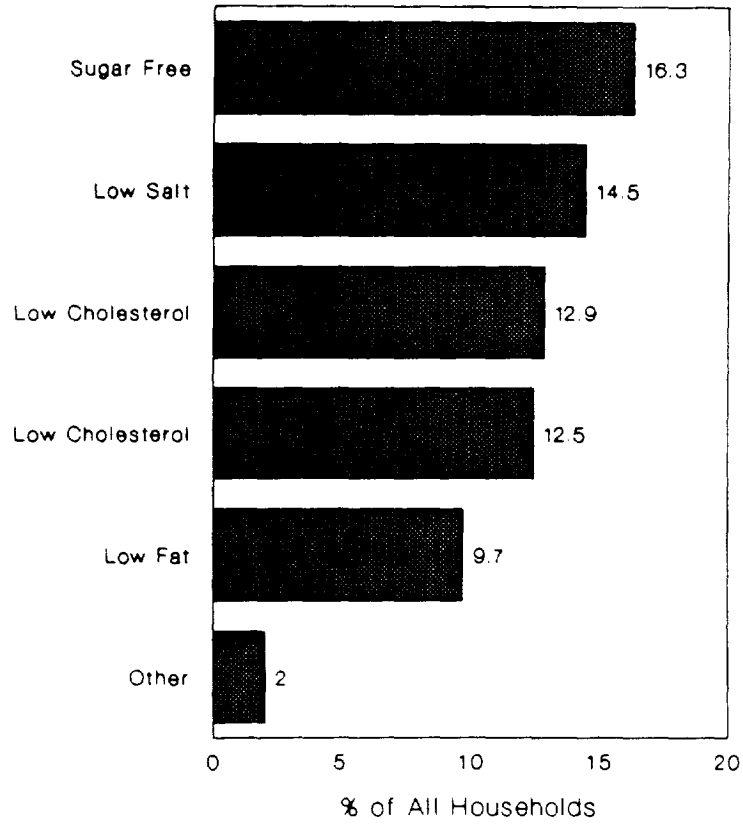
[32]Lee, E.T., et al., "Diabetes, Parental Diabetes and Obesity in Oklahoma Indians." Diabetes Care, Vol. 8, No. 2, pages 107-113, March-April 1985.

[33]National Center for Health Statistics, D.A. Dawson and P.F. Adams: Current Estimates from the National Health Interview Survey, US, 1986. Series 10, No. 164. DHHS Pub. No. (PHS)87-1592. Public Health Services, Washington, GPO, October 1987, Table 57, page 86.

Exhibit III.26
Medically Prescribed Diets Among
FDPIR Households



Sample of 757 survey households.

It is difficult to determine if all of those with nutrition-related health problems actually received an appropriate and corresponding diet prescription from a health professional. Depending upon the medical condition, between 32 and 52 percent of the individuals who were diagnosed with a nutrition-related health problem did not report receiving a specialized diet. This may reflect the fact that respondents did not know about or recall diet prescriptions, did not receive one because of other mitigating medical circumstances, or should have received a prescribed diet but did not.

In summary, over one-half (53.9 percent) of the FDPIR households reported having a least one adult with a nutrition-related health problem and over one-quarter had at least one household member who received a prescribed diet from a physician or other health professional. The self-reported rates for diabetes and obesity were lower than clinical estimates reported in the literature, while the self-

reported rate for hypertension was higher than recent published rates.

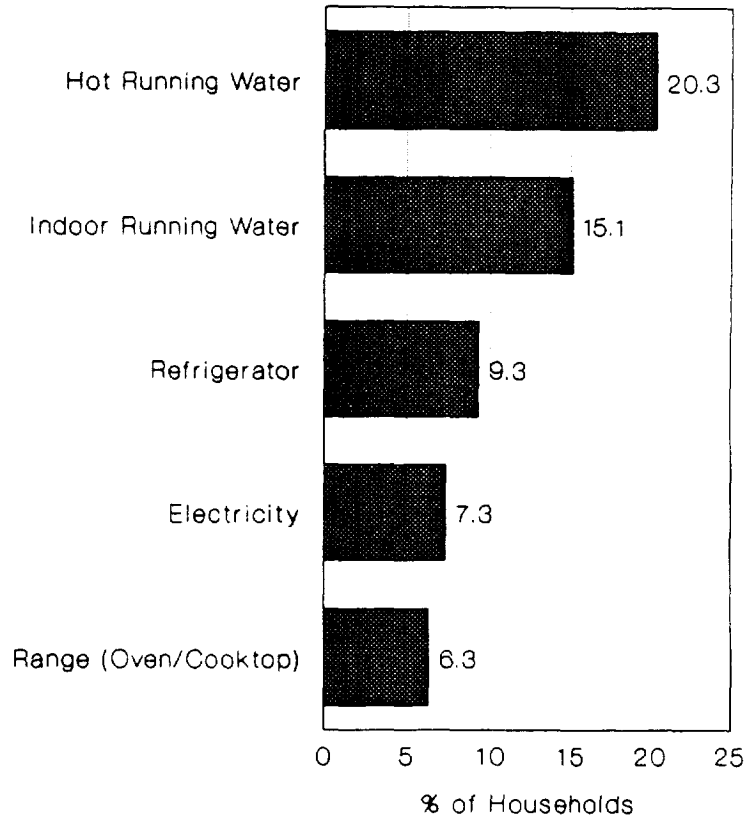
Household food storage and preparation facilities. The dietary needs of the study population are a function of multiple factors, such as age, health status and physical activity. Another factor that influences dietary status is the effective utilization of foods. This, in turn, depends upon adequate household food storage and preparation facilities.

Survey results indicate that most FDPIR households have adequate storage and cooking facilities. However, some FDPIR households reported the lack of at least one of five basic household facilities. These data are summarized in Exhibit III.27. One-fifth of the program population (20.3 percent) reported not having hot running water in their home, and 15.1 percent reported no running water of any kind within their home. Three-quarters (75.4 percent) of those reporting that their households lacked running water lived in the Western Region, and 38.4 percent of all Western Region FDPIR households did not have indoor running water.

About 9.3 percent of the FDPIR survey households reported having no refrigerator, with 90 percent of those households located in the Western Region. Of the 7.3 percent that reported they had no electricity, 91.8 percent lived in the Western Region. In total, over one-fifth (22.6 percent) of all FDPIR households located in the Western Region had no electricity. Of the 6.3 percent that reported they did not have either an oven or cooktop stove, 65.4 percent of the households lived in the Western Region.

The estimate of about 15 percent of all FDPIR households having no indoor running water and 9 percent having no refrigeration of any kind would suggest that for a number of program participants food storage and preparation facilities are not adequate. In these cases, the nature of commodity food packaging becomes particularly important to a healthful diet. Most commodity food items are available in containers which permit safe maintenance at room temperature without risk of spoilage prior to usage. However, for many foods (i.e., canned fruits, vegetables and meats), once they have been opened refrigeration is essential to prevent spoilage and the risk of food borne illness. This may be a particular problem among smaller households which cannot consume the contents of a single commodity container in one meal. Some commodity dairy products also require refrigeration (i.e., butter and cheese). For about 10 percent

Exhibit III.27
FDPIR Participant Households Lacking
Food Storage/Preparation Resources



Sample of 757 survey households.

of the program population with limited food storage and preparation facilities (see Exhibit III.27), specific consideration should be given when they select commodity items, and, ideally, during nutrition education.

Food Preferences

One of the primary objectives of this study was to assess FDPIR participants' satisfaction with items in the food package which they had been offered. Acceptability of commodities affects the extent of their contribution to household diets. If the items are not liked they may not be fully used.

Food preferences were assessed only for items that are generally available through the program (actual availability may vary month-to-month and, as discussed in Chapter II, across local programs). Respondents were asked which of about 69 individual food items within 15 different commodity food groupings they liked most (first and second preferences) and if they disliked any of those foods. If they stated that they disliked an item, they were asked to say why they did not like it. In those food groupings in which only two food items were listed, respondents were asked to identify only one most liked item. In all, a sample of 757 FDPIR participants described their food preferences.

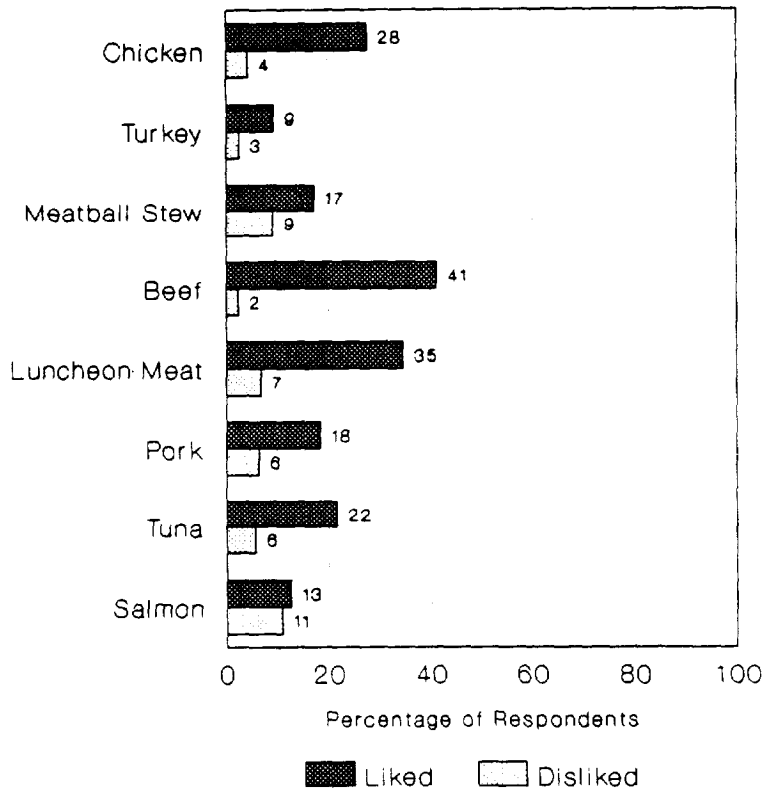
Respondent preferences are presented in the following exhibits. The charts show the percentages of respondents who (1) expressed a preference (most liked or second most liked are summed together) for an item within a food group, and (2) selected items they disliked. The accompanying text explains the overall results, and where appropriate, major regional variation in food preferences (a detailed summary of food preferences by region is provided in Volume 2). The reported commodity dislikes also are presented, including the primary reasons for dissatisfaction. This discussion also summarizes the commodity food preferences described by participants in the three focus group discussions.

Generally, respondents expressed much stronger preferences for commodity items than dislikes. With few noted exceptions, food items were liked by substantially more respondents than were disliked. One-fourth of the survey respondents (23.8 percent) did not express a dislike of any item in the FDPIR package. Many others reported disliking only selected food items. Among those who reported dislikes, the vast majority of responses pertained to taste with half to three-fourths of all opinions within any food group being "I don't like the taste." In fact, no particular concern other than taste was expressed by five percent or more of the full respondent sample. Finally, reported food dislikes did not reveal any problematic food items or groups.

Canned Meats For canned meats and fish, beef and luncheon meat were the first and second most liked products, with chicken a close third, followed by tuna (Exhibit III.28). Salmon and meatball stew were reported to be the least liked items in this group, although more respondents preferred these items than disliked them. Among canned meats, geographic region was important in the selection of most and least liked items. (These results are graphically displayed in Volume 2 of this report.) For example, in the Southwest Region, a higher percentage of individuals reported most liking pork and a smaller percentage reported liking luncheon meat, while in the Mountain-Plains Region, luncheon meat was most liked by the highest percentage of respondents, while chicken was least often mentioned as a most liked item.

Over one-third (36.9) of respondents provided reasons for dislikes of specific canned meats. These included: do not like the taste (44.1 percent); too much fat and grease, or too rich (12.5 percent); smells and/or looks bad (8.2 percent); and, too salty (6.5 percent).

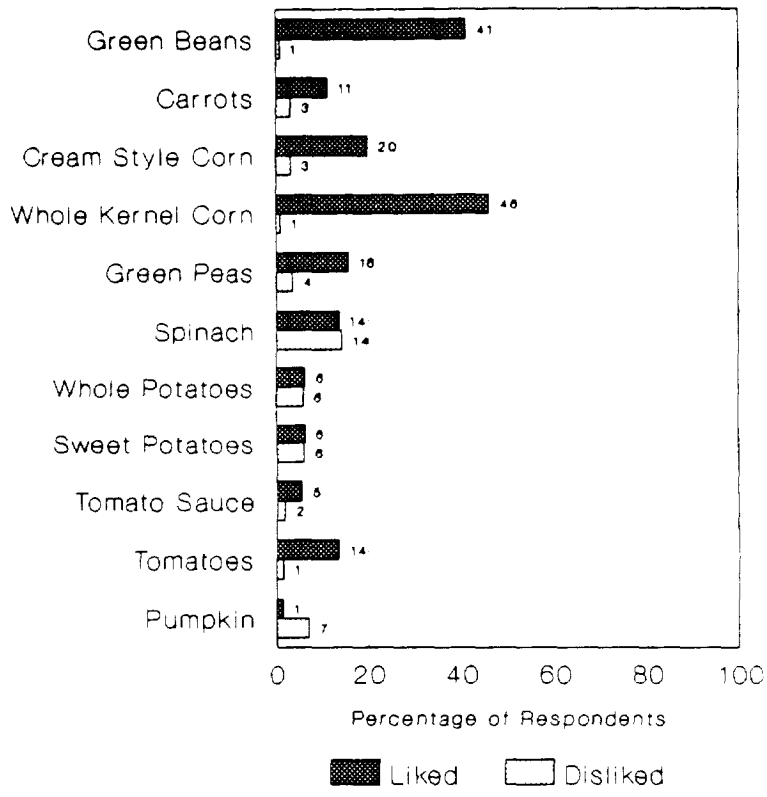
Exhibit III.28
Preferences Within Food Groups:
Meats



Canned Vegetables Among the canned vegetables listed in the following exhibit, whole-kernel corn and green beans were clearly the first and second most liked commodity items, respectively, with green beans particularly liked in the Northeast and Southeast Regions. Canned spinach was most disliked, followed by canned pumpkin. For spinach, whole potatoes and sweet potatoes, the number of respondents who most liked these items were about equal to those who disliked them, largely reflecting apparent differences in personal taste.

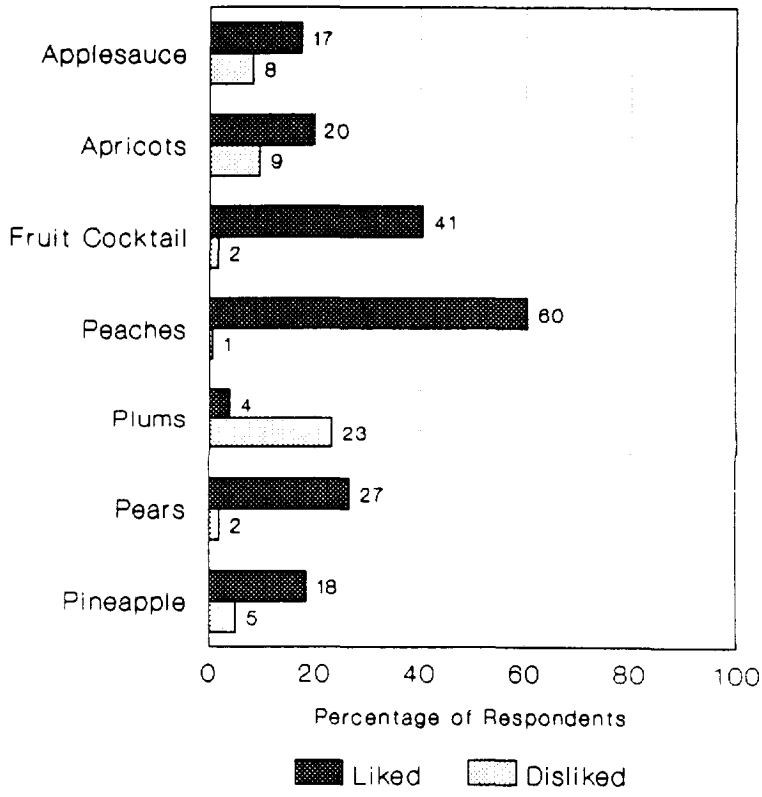
One-third (33 percent) of respondents provided reasons for their dislike of particular canned vegetables. The overwhelming majority of respondents (77.2 percent) did not like the taste. Many fewer respondents (4.8 percent) said they didn't know how to prepare it.

Exhibit III.29
Preferences Within Food Groups:
Vegetables



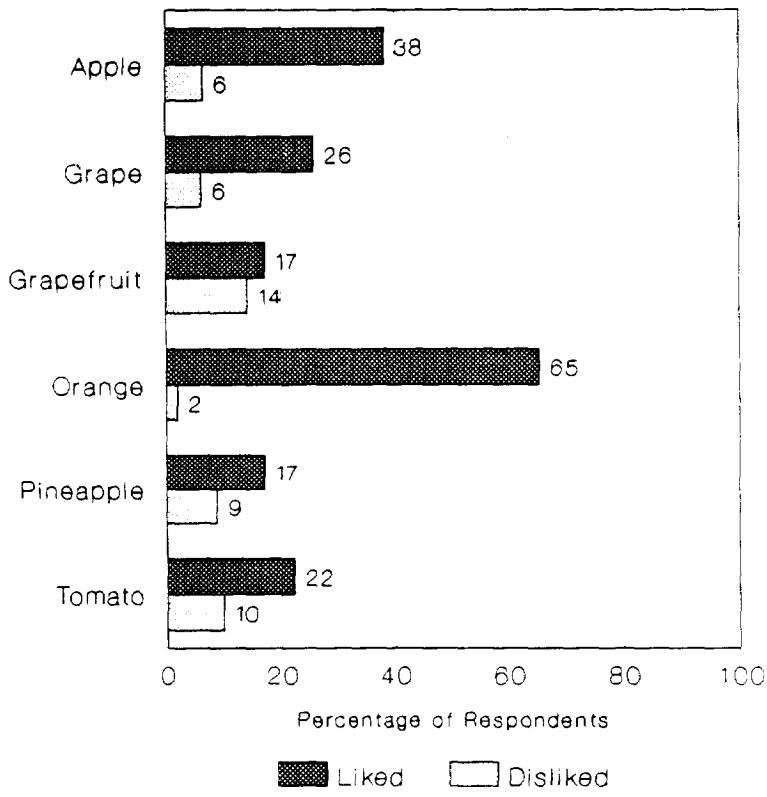
Canned Fruit Among the canned fruits, peaches and fruit cocktail clearly were the first and second most liked canned fruits available through the program, particularly in the Western, Mountain-Plains and Southwestern Regions (Exhibit III.30). Almost half of those interviewed in the Southwestern Region listed peaches as their favorite canned fruit. Plums were reported to be the least liked canned fruit, especially in the Midwestern Region. Of the 269 respondents who described their dislikes of any of the canned fruits (35.5 percent of the survey sample), most (65.8 percent) did not like the taste, and a smaller number (11 percent) thought that they were too sour.

Exhibit III.30
Preferences Within Food Groups:
Fruits



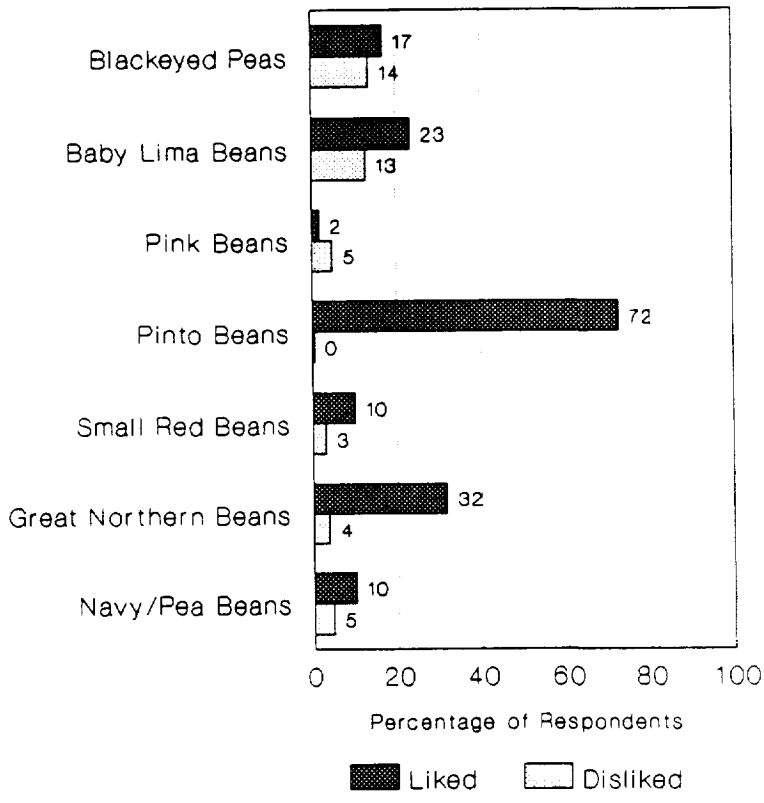
Canned Juices Among the canned fruit juices noted in the following exhibit, orange and apple juice were the first and second most liked juices available through the program, while grapefruit juice was liked least by participants (Exhibit III.31). However, slightly more respondents reported liking grapefruit juice than those who reported that they disliked it. Thirty-five and a half percent of the respondents reported the reasons for disliking a particular juice. Over one-third (37.5 percent) of these respondents did not like the taste, and another 33.5 percent stated that the juices were too sour. Over ten percent (11.2 percent) thought the juices were too sweet, and 8.6 percent said that juices gave them heartburn.

Exhibit III.31
Preferences Within Food Groups:
Juices



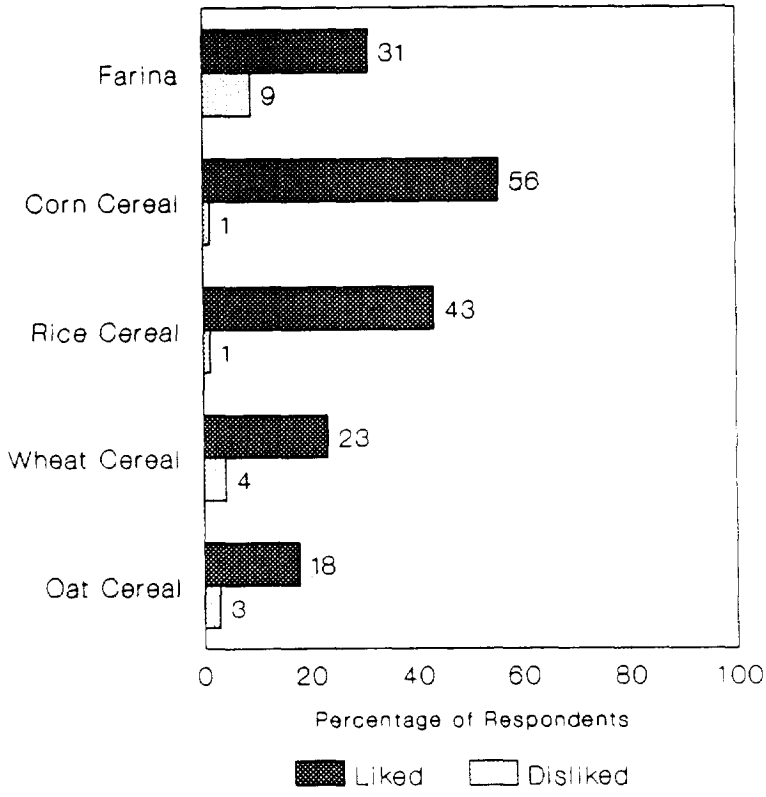
Dried Beans As Exhibit III.32 indicates, survey respondents selected pinto beans first, and great northern beans second among their most liked dried beans. Given the similarity of pinto beans and pink beans, the latter's very low rating is puzzling. Almost no respondents mentioned a preference for pink beans, and this may indicate a lack of familiarity with, or unavailability of, the product. The least liked dried beans were blackeyed peas, particularly in the Midwest, Mountain-Plains and Western Regions, although the overall strength of this dislike was relatively weak. Lima beans were most frequently disliked in the Western Region.

Exhibit III.32
Preferences Within Food Groups:
Dried Beans



Cereals The cereal most liked by respondents was corn cereal (Exhibit III.33). It was followed very closely by rice cereals. Farina appeared to be particularly liked in the Western Region. Only 14.8 percent of respondents provided a reason for disliking a specific cereal, and the overwhelming reason was that they disliked the taste (67 percent).

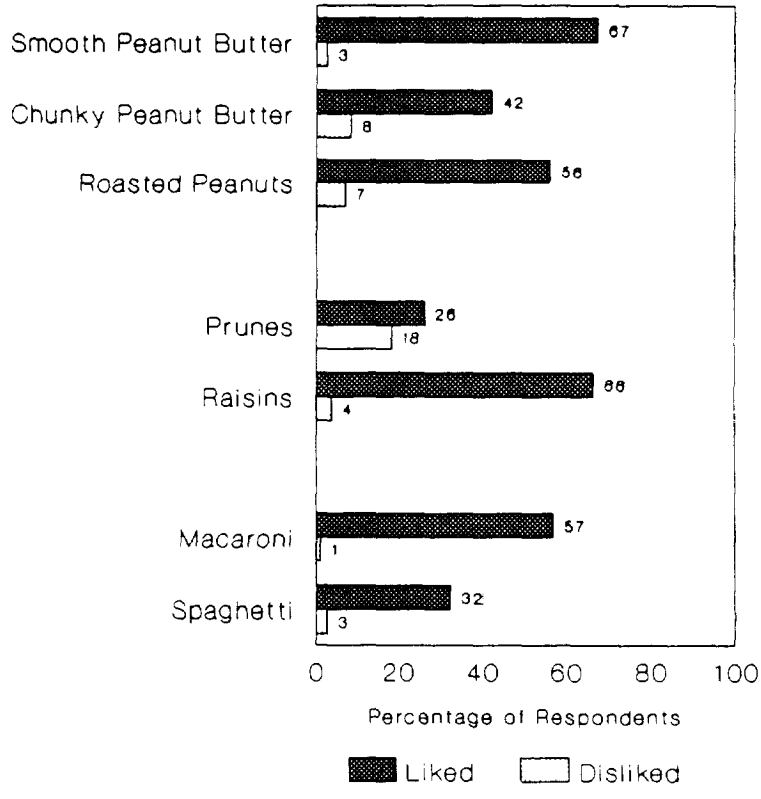
Exhibit III.33
Preferences Within Food Groups:
Cereals



Peanut Products Exhibit III.34 presents preference results for three separate food groups. Among the peanut products, smooth peanut butter was the most frequently liked with few dislikes reported for any of these items. Roasted peanuts were particularly liked in the Northeast and Southeast Regions, and smooth peanut butter was generally preferred to the chunky form and to roasted peanuts among participants outside the Southeast and Northeast. Of the 15.2 percent of respondents who provided reasons for disliking a peanut product, the most frequent statement (41.7 percent) was that they could not chew the product due to dental problems. About one-quarter (22.6 percent) said they did not like the taste.

Dried Fruits Respondents indicated a strong preference for raisins, compared to prunes, and more were inclined to express a dislike for prunes. It should be remembered that for a food group with two items, only one preference was requested. However, the exhibit below does indicate that prunes are liked by approximately one-fourth of all FDPIR households. Of the 146 respondents who said why they disliked dried fruits (19.3 percent of the survey sample), two thirds (66.4 percent) said they didn't like the taste, and 7.5 percent said they didn't know how to prepare them.

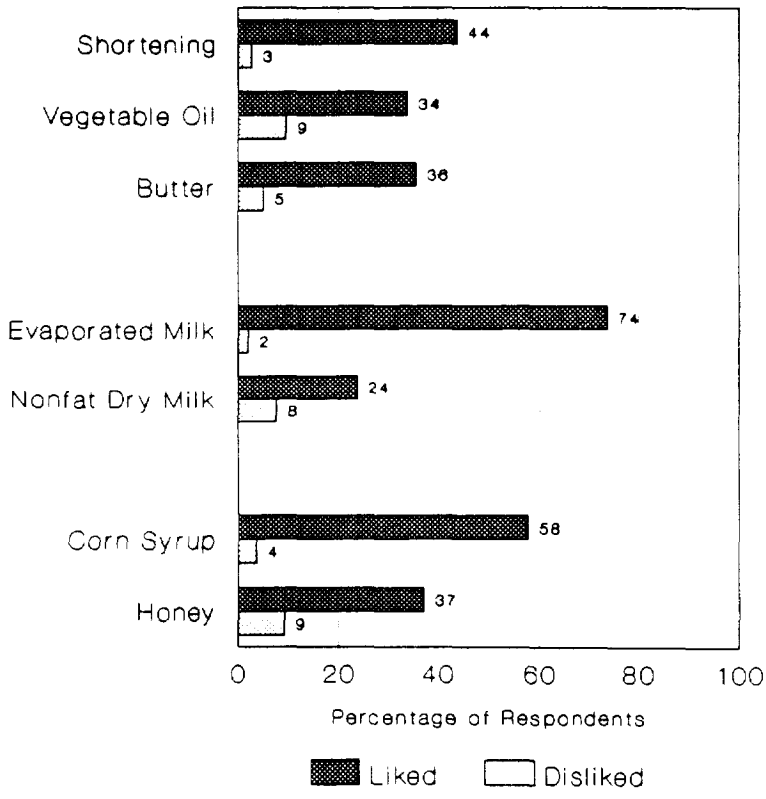
Exhibit III.34
Preferences Within Food Groups:
Three Different Groups



Pasta Exhibit III.34 also summarizes preferences for two types of pasta. Macaroni was most liked by a higher proportion of respondents in the Western Region, and it was generally preferred to spaghetti. Very few dislikes were reported for either product (2.8 percent of the respondents).

Fats, Milks and Sweeteners In Exhibit III.35, preferences for seven food items are summarized (with separate comparisons made for each of the three food groups). Preferences were roughly equivalent across the three fats (shortening, vegetable oil and butter). Shortening was most frequently listed as a liked item in the Western Region. Vegetable oil was liked most frequently in the Northeast and Southeast Regions and disliked most frequently in the Western Region. Butter was most often liked in the Midwest Region.

Exhibit III.35
Preferences Within Food Groups:
Fats, Milks, and Sweeteners



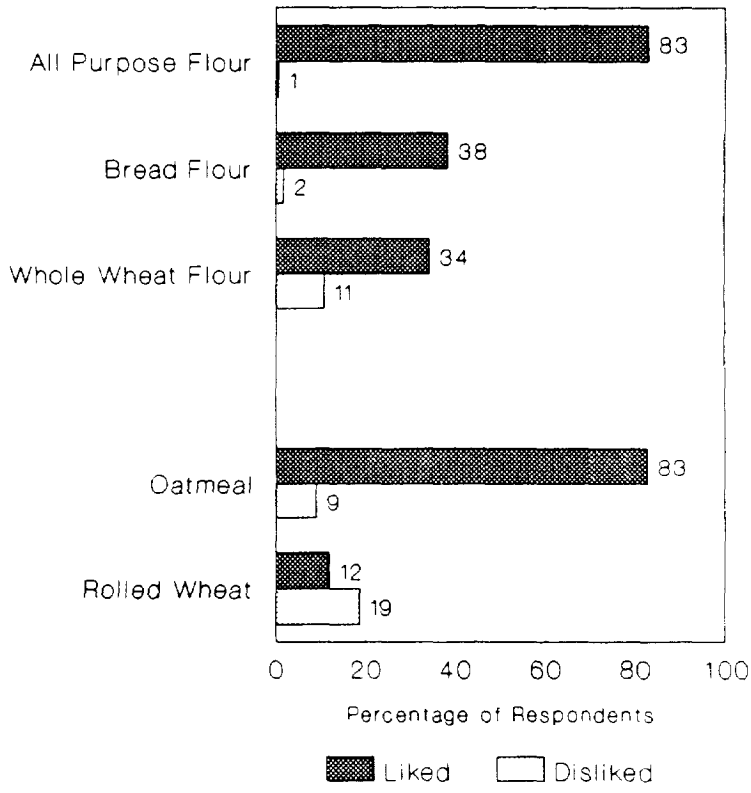
Evaporated milk was most frequently liked when compared to nonfat dry milk, and was most often liked in the Midwest Region. Corn syrup was reported liked more frequently than honey, although honey was very well liked in the Northeast, Southeast and Western Regions.

None of these items scored high as a disliked food item. Dislikes for food items within the three food groupings mostly were related to not liking the taste of a particular item. For the 107 respondents (14.1 percent of all respondents) who gave a reason for disliking an oil, 40.2 percent did not like the taste, 18.7 percent thought the product was too oily and/or greasy, 10.3 percent wanted to eat less fat and oil, and 9.3 percent did not like the smell. Only 62 respondents (8.2 percent of survey sample) stated a reason for not liking a milk product, and the most important reason was that they didn't like the taste (61.3 percent). A little over ten percent of this group (11.3 percent) thought that they received too much to use in a month, and another 9.7 percent reported that they didn't know how to use it. Finally, for the 11.2 percent of the sample stating a dislike for a sweetener, most (47.1 percent) did not like the taste, fewer thought that they were too sweet (28.2 percent) and even fewer (15.3 percent) thought that they received too much.

Flours and Hot Cereals All purpose flour was most frequently liked compared to bread flour and whole wheat flour (Exhibit III.36). In the Western Region, bread flour was particularly liked while all-purpose flour was selected as most liked less frequently than in other regions. The two main reasons for disliking a flour product, among the 84 respondents (11.1 percent of the survey sample) who provided a reason, were that they did not like the taste (44 percent) and they did not know how to prepare it (29.8 percent).

FDPIR participants showed a clear preference for oatmeal over rolled wheat. In fact, more respondents reported disliking rolled wheat than liking the product. Specific dislikes for rolled grains among the 19.2 percent of all respondents who provided their reasons were; do not like the taste (25.5 percent) and do not know how to prepare (16.6 percent).

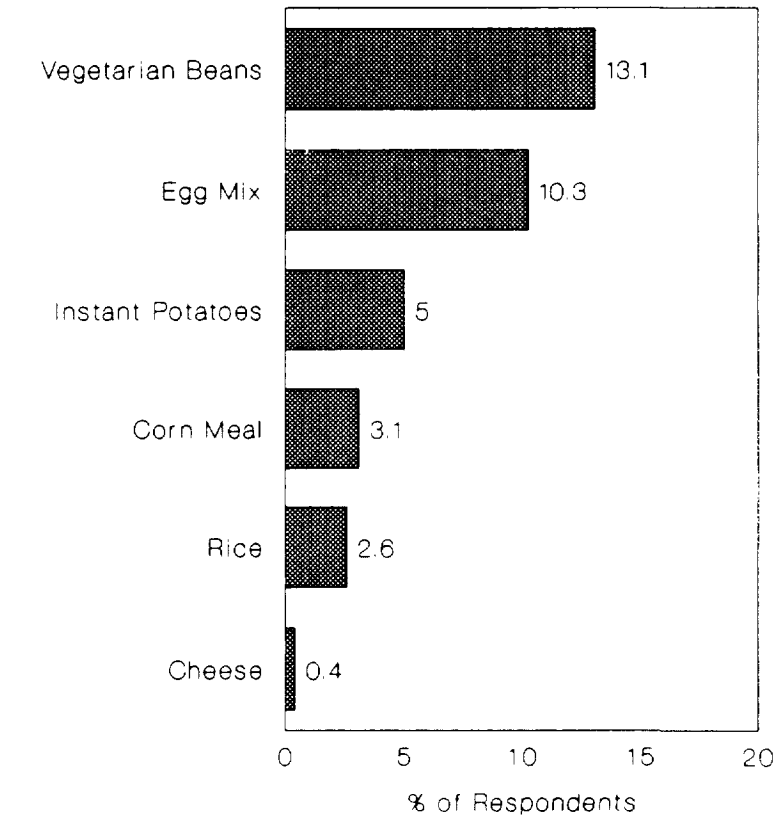
Exhibit III.36
Preferences Within Food Groups:
Flours and Hot Cereals



Miscellaneous Foods Several commodities are offered as individual items without alternative choices (Exhibit III.37). They are cheese, egg mix, vegetarian beans, rice, instant potatoes and cornmeal. Respondents were simply asked if they experienced problems with any of these commodities. The exhibit below summarizes the extent to which respondents expressed their dislike for each item. Reports of dislike generally were infrequent. The only items for which respondents expressed a noticeable dislike were the vegetarian beans and egg mix. This is consistent with the results of the focus group discussions, in which participants reported their dislike of both products.

Of the 201 respondents providing a reason for disliking one of these food items, most (72.6 percent) did not like the taste, and 12.9 percent reported that they did not know how to prepare the item.

Exhibit III.37
Expressions of Dislike for
Specific Commodities



Sample of 757 survey households.

Food Preferences: Focus Group Discussion During FDPIR focus groups, participants were asked which of the entire listing of available food items were most liked, least liked, what other foods were important to their diets, and what foods they would have liked but were unable to acquire, for whatever reason.

Based on the results of the three focus group discussions, the most frequently identified commodity food items that were liked included canned fruits, canned vegetables, fruit juices and butter. Food items identified as liked by two out of three focus groups included canned meats, peanut butter, cheese and cereals. While two out of three focus groups stated that one of their most liked items was canned meat, all three groups stated that they disliked the strong flavor, and the high fat and salt content. Participants suggested that these items be packaged or processed differently to improve their acceptability and nutritional quality. All focus groups agreed that the least liked food item was the vegetarian beans, with mixed preferences related to other types of beans. Bean preferences appeared to be regional, with different beans liked and disliked in different regions. For example, neither black-eyed peas nor limas were well liked in Wisconsin.

A number of food items were identified by focus group participants as important to their households' diets, but not received through the program. The most commonly reported foods were fresh vegetables, fresh meats, fresh milk, eggs, sugar, and other beverages. Participants also expressed a desire for seafood that is generally not available in local markets or cost too much to purchase. The canned salmon occasionally offered by the program was reported to be a highly preferred commodity which generally was not available to participants. However, the focus group preference for fish may or may not accurately reflect national FDPIR preferences, since two of the three focus groups were conducted in communities with a strong fishing tradition.

C. SUMMARY AND CONCLUSIONS

Using data from the FDPIR household case records and interviews with participants, we developed a detailed profile of a nationally representative sample of households that received commodities in September 1989. We also examined indicators of dietary need based on survey respondents' reports of the adequacy of their food supplies, expenditures for food, food preparation and storage facilities, and self-reports of nutrition-related health problems. This assessment

also included asking participants which items in the FDPIR food package they liked the most, and which, if any, they disliked.

Participant Profile

The profile of FDPIR participants provides information in four areas—household composition, characteristics of household members, household income and assets, and access to services.

Household Composition. While the FDPIR program serves a wide range of household types, several interesting profiles of participating households emerged in the study. A large proprtion of the program caseload consists of small households. On average, FDPIR households contained 3.2 persons, and about 40 percent of the sample were one- or two-person households.

About half of households included children, and most of these children lived in households with an adult male and an adult female (i.e., a couple). The vast majority of large households (with five or more members) was made up of couples with children. We found many fewer single-parent households in the sample (about 10 percent). Female-headed single-parent households, which make up 46.7 percent of the US low-income families, constituted only 8.5 percent of FDPIR caseload. Part of the reason for this may be the tendency among families receiving AFDC to participate in the Food Stamp Program rather than FDPIR.

A substantial proportion of FDPIR households included older persons. More than one-third (38.9 percent) of all households included an elderly person (that is, someone aged 60 or older). In fact, the elderly accounted for 62 percent of the one-person households.

Half of the FDPIR households with an elderly member also included non-elderly members. However, about one-third of the elderly households were persons living alone. The remainder of elderly households consisted of two or more elderly persons living together. The prevalence of elderly participants, especially those living alone, presents a challenge for delivery of food assistance services.

Characteristics of Household Members. Program data indicate that more than 135,000 individuals in 44,442 households participated in FDPIR during September 1989. Survey data indicate that individual participants were evenly divided by gender. However, male participants tended to be younger, generally reflecting the larger number of female-headed households, including elderly women who lived alone. Adult female and male participants did not differ with regard

to their level of education. More important, however, approximately half of each group had less than 12 years of education.

Survey data indicated that over 40 percent of the adult FDPIR participants were either working, looking for work, or laid off from a job during September 1989. The group most likely to be employed in September 1989 was persons aged 30 to 59. One-third of this group were working compared to one-fourth of the younger adults aged 18 to 29. Consistent with these findings, more than one-fourth of the youngest adults were those most likely to be looking for work or to have been laid off. Also, nearly one in six of this group was attending school. Over one-fourth reported that they were keeping house. Nearly one-fourth were retired or disabled. We also found that the age of participants was related to their reported activities. Among the elderly, for example, fewer than one in ten were working, laid off, or looking for work. Two out of five were described as retired and one out of five was disabled. Most of the remaining elderly were said to be keeping house.

Economic Status. Consistent with the income-eligibility guidelines established for FDPIR, income levels for the sample households were very low. FDPIR case record data indicate that one-third of the households had gross income equal to 50 percent or less of the poverty level established for 1989, and more than half had income no greater than 75 percent of poverty. Nearly one in ten households, did not have any income, according to their case records.

The low level of income among FDPIR households existed in spite of the fact that one-third of the households had earnings (wages or income from self-employment). Also, about one in twenty were receiving unemployment benefits related to recent employment. In addition, a substantial group of households had income related to past employment of a household member. Nearly three in ten households had income from Social Security and a few (3.4 percent) had pension income. The military service of some FDPIR participants is reflected in the receipt of veteran's benefits by 7.4 percent of the households. More than a third of the sample households received income from AFDC, Supplemental Security Income (SSI), or General Assistance.

The impoverishment of FDPIR households is reflected in their level of liquid assets as well as their income. More than three-fourths of the household case records indicated no cash on hand and nearly as

many showed no financial assets of any kind. Among the households that had liquid assets, more than half indicated that they had less than $50, typically in a checking account or cash in hand. Thus, the financial assets of these households were generally well below the asset limits established for FDPIR eligibility.

Access to Services. One of the assumptions underlying the establishment of FDPIR was that the remote location of reservations and the wide dispersion of population within them made it difficult for many American Indians to reach grocery stores and public agencies. One of the objectives of the study, therefore, was to determine how far participants have to travel to reach the commodity distribution site, food retail outlets, and (if they were to apply for food stamps) the nearest food stamp office.

Although there was some regional variation in travel distances, the average distance each way to these destinations was approximately 10 miles or less for households in almost all regions. The nearest food store was usually within four to five miles of participants' homes, whereas obtaining fresh meat and vegetables required driving to a store four to eight miles away. Commodities usually could be obtained at a site located six to nine miles from the participant's home. However, for as many as one out of five households, travel distances to obtain commodities exceeded 20 miles.

Given their relatively remote places of residence, it is clear that transportation is important to FDPIR participants. Overall, nearly one-fourth of all sample households reported that they very often had difficulty getting where they needed to go. More than two-thirds of participant households owned a car or truck. Among these households, only one out of six (one-tenth of all households in the sample) very often had difficulty getting where they needed to go because of problems with their cars or trucks. However, more than half of *all* households that owned a vehicle reported that they sometimes could not travel because they lacked money to buy gas.

Households without vehicles were much more likely to experience difficulty getting where they needed to go. Four out of ten households in this group (one out of eight sample households) reported that they very often had problems getting where they needed to go because a car or truck was not available, or because they could not get a ride. Also, nearly two-thirds said that they sometimes lacked money to pay someone to drive them.

Dietary Need

To study dietary need, we examined the adequacy of FDPIR household food supplies, the availability of food preparation and storage facilities, and nutrition-related health problems. Each issue is discussed below.

Adequacy of FDPIR Household Food Supplies. In order to assess the adequacy of the FDPIR household food supply, we studied three sets of measures: food expenditures; other important sources of food that had not been purchased or obtained through FDPIR; and, the perceived food needs of FDPIR households. FDPIR households included in this study spent an average of $31 per month per household member for food to supplement the commodities they received. About $24 of this amount was spent in grocery stores. An additional $5 per person each month was spent at restaurants and about $1 per person per month for take-out foods. However, 43 percent of the sample households only bought food at grocery stores, and the households that ate at restaurants or bought take-out food generally had higher incomes. In fact, the level of spending per capita at grocery stores was very similar across all households ($25-$28). It appears, then, that spending at restaurants and for take-out foods did not detract from purchases at grocery stores, but was only possible if the household had a relatively high level of income.

About half of all FDPIR households produce some food themselves, including fruits and vegetables, eggs, dairy products, livestock for home use, or hunting and fishing. Almost one-quarter of all FDPIR households in the study sample reported growing vegetables for home use, and in the Southwestern Region, about one in three households reported that they grew vegetables. Almost one-third of the households reported using hunting or fishing as a supplemental food source, particularly in the Midwestern and Mountain Plains Regions.

Nearly half of the FDPIR households reported participating in other food assistance programs, mostly in other USDA programs. Approximately one out of three households included a child who received free or reduced-price school lunches, representing 70 percent of the households with school-aged children. One out of five households had a child participating in the School Breakfast Program, but this represented 44 percent of the households with children in school. Finally, nearly one in six FDPIR households received benefits under the WIC Program, representing 52 percent of the households with children aged five or less.

Seven out of eight respondents (88 percent) reported that their household had enough to eat during the survey reference month, but some did not always have the kinds of food that they wanted. One out of eight respondents reported that they sometimes or often did not have enough food to eat. Four out of five households in this group said that there were days when they were without food or money to buy food. On average, these households did not have enough to eat for one day out of every five or six days. Two-thirds of these households also skipped an average of over four days of meals per month.

Self-reports of inadequate food supplies varied greatly by region. One-quarter of all FDPIR households in the Western Region reported they sometimes or often did not have enough to eat, and they represented three out of five of all FDPIR households reporting this. Also, nearly three-fourths of the FDPIR households who reported that they had to skip meals "because there wasn't enough food or money to buy food" were from the Western Region.

Food Preparation and Storage Resources. Most FDPIR households had adequate storage and food preparation facilities. However, some FDPIR households reported the lack of at least one of five basic facilities. One-fifth of the sample program participants reported not having hot running water in their home, and 15 percent reported no running water of any kind within their home. About 7.3 percent of sample households reported they had no electricity, 9.3 percent reported having no refrigerator, and 6.3 percent reported they did not have either an oven or cooktop stove.

The availability of basic housing facilities and food preparation and storage resources also varied by region, with the Western Region having a disproportionate number of FDPIR households lacking basic resources. Three-fourths of those reporting that their households lacked running water lived in the Western Region. (More than one-third of all Western Region FDPIR households did not have indoor running water.) Of those households reporting they had no electricity, nine out of ten lived in the Western Region, representing over one-fifth of all FDPIR households located in that region. Of the FDPIR households reporting no refrigerator, nearly all (90 percent) were located in the Western Region. Finally, two-thirds of those who reported they did not have an oven or cooktop stove lived in the Western Region.

Nutrition-Related Health Problems. In total, just over half of all FDPIR households had at least one adult (a person 16 years old or older) with one or more nutrition-related health problems. More than one out of four FDPIR households had at least one member who had been prescribed a special diet by a health professional. Almost one-third of all households reported at least one person with diagnosed high blood pressure, about one-quarter with a member having diagnosed diabetes and over one-fifth with at least one overweight household member. For diabetes and obesity, prevalence rates based on self-reports by survey respondents fell below estimates among American Indians generated by health officials and researchers.

These same nutrition-related problems were identified by focus group participants as health issues of significant concern to their reservations. Further, participants were aware of many of the risk factors related to high blood pressure and diabetes, which includes obesity. While there was a general awareness of these problems and some of their underlying causes, there also were misconceptions and a lack of information on how to improve dietary habits. Participants expressed a sense of helplessness about making necessary changes in their lives and the need for further health and nutrition education.

Food Preferences. Within each of 15 commodity food group (juices, fruits, vegetables, and so on), respondents indicated which of 69 items they clearly preferred. It was notable that the number of respondents indicating a strong preference for any given item far exceeded the number expressing dislike for that item. Also, in the vast majority of cases, expressions of dislike represented personal taste (for example, perceiving an item as too sour or too sweet) rather than perceptions of poor food quality. No particular concern other than taste was mentioned by five percent or more of the respondents.