

## Food Basket Calculator: Instruction Sheet

This workbook was created to assist in building food baskets to meet the nutrient requirements of targeted families and other beneficiaries of direct distribution programs. There are several elements contained in the worksheets, including worksheets to fill in and worksheets to do the calculations to determine if the food basket meets program needs. The instructions below will take you through the process in a stepwise fashion.

Before you begin, it may be helpful to save the workbook with the project or proposal name. Save the original workbook as the master that you can access for other projects in the future. Once you have saved it to enter in information, you can begin to enter information that will allow the workbook to calculate both the calorie and protein needs for the beneficiary units (families or individuals) and to compare commodities you may choose to provide as a part of the food basket and beneficiary needs.

### Step 1: Food Basket Calculations

To start, click on the first tab “Food Basket Calculations”. You will notice that there are some cells highlighted in a teal color. You will be filling in the teal boxes with information. There are also yellow-highlighted cells. These cells are either examples or the calculations that are based on your entries. You should not change the yellow-highlighted cells.

The dark teal cells in the upper left corner allow you to identify the project name, a family code or surname (if you are calculating a single person or family ration), and any contact information. You can also enter the number of people in an average family size.

The next area on this sheet allows you to identify the characteristics of the beneficiaries. If you want to do the calculations for a single person, you can enter in the data for that person. If you want to do a calculation for an average family, you can decide the composition of that average family.

In the example shown here, we chose to enter information for an “average” family of 6, which includes:

- 1 male adult, with a moderate activity level, and who is not HIV-infected
- 1 female adult, with a moderate activity level, and who is not pregnant, lactating, or HIV-infected
- 1 child who is 1-3 years of age
- 1 child who is 5-7 years old
- 1 boy who is 14-16 years old

- 1 girl who is 12-14 years old

Daily Energy and Protein Requirements for Adults and Children													
Project name/description:		PL430 Feeding Project											
Family code or surname:		Average Family											
Contact information:		PYO Name, Contact Info											
Total number in family:		4											
Totals:		Total family caloric needs: 12228.0 Total family protein needs: 295.0											
Instructions: Fill in the information in the <b>Light Green</b> boxes for both adults and children in the household. Totals for the family will appear above.													
Adults in Household													
Gender (G)	Activity Level (AL)	Base Calorie	Pregnant	Preg Calorie	Lactating	Col/Inf/Lactatg	HIV-infected	Minimum Calorie	Minimum Protein	Total Protein			
G-M/F	AL-M/H		Yr (y) or No (n)		Yr (y) or No (n)		Yr (y) or No (n)	(no HIV infection)					
Example: f	m	2170.0	y	2455.0	y	2955.0	y	2250.0	61.0	136			
1 m	m	2420.0	n	2420.0	n	2420.0	n	2420.0	57.0	57			
2 f	m	2170.0	n	2170.0	n	2170.0	n	2170.0	41.0	48			
3		0.0		0.0		0.0		0.0	0.0	0			
4		0.0		0.0		0.0		0.0	0.0	0			
5		0.0		0.0		0.0		0.0	0.0	0			
6		0.0		0.0		0.0		0.0	0.0	0			
7		0.0		0.0		0.0		0.0	0.0	0			
8		0.0		0.0		0.0		0.0	0.0	0			
9		0.0		0.0		0.0		0.0	0.0	0			
10		0.0		0.0		0.0		0.0	0.0	0			
Adult Totals:								4600.0	165.0	165.0			
Children in Household													
Number	Calorie/child	Protein/child	Base Calorie	Base Protein	Pregnancy	Preg Calorie	Preg Protein	Lactating	Lactating Cal	Lactating Prot	HIV-infected	Total Calorie	Total Protein
					Yr (y) or No (n)			Yr (y) or No (n)			Yr (y) or No (n)		
Example: Girl 16-18 years old	1	2150	66	2150	66	y	2435	73	y	2935	86	3228.5	132
0-2 months old		404	2.8	0	0	n	0	0	n	0	0	0	0
3-5 months old		580	2.1	0	0	n	0	0	n	0	0	0	0
6-8 months old		682	10	0	0	n	0	0	n	0	0	0	0
9-11 months old		820	12	0	0	n	0	0	n	0	0	0	0
1-2 years old	1	1250	23	1250	23	n	1250	23	n	1250	23	1250	23
3-5 years old		1500	26	0	0	n	0	0	n	0	0	0	0
5-7 years old	1	1710	30	1710	30	n	1710	30	n	1710	30	1710	30
7-10 years old		1880	38	0	0	n	0	0	n	0	0	0	0
Boys:													
10-12 years old		2170	50	0	0	n	0	0	n	0	0	0	0
12-14 years old		2360	64	0	0	n	0	0	n	0	0	0	0
14-16 years old	1	2620	75	2620	75	n	2620	75	n	2620	75	2620	75
16-18 years old		2920	94	0	0	n	0	0	n	0	0	0	0
Girls:													
10-12 years old		1920	52	0	0	n	0	0	n	0	0	0	0
12-14 years old	1	2040	62	2040	62	n	2040	62	n	2040	62	2040	62
14-16 years old		2120	69	0	0	n	0	0	n	0	0	0	0
16-18 years old		2150	66	0	0	n	0	0	n	0	0	0	0
Children:								Total caloric and protein needs:			7620	199	

The formulas calculate the anticipated calorie and protein needs for each of the persons entered and totals up the amount for adults and children. The total calorie and protein needs for the whole average family is then displayed in the yellow cells toward the top of the page. These amounts will be used to compare the food basket you design to the needs that have been calculated on sheet 1.

**Step 2. Commodity Calculations**

This worksheet allows you to enter the amount and types of commodity products that you might want to program for your beneficiaries. Again, you can fill in the teal cells to allow the sheet to calculate totals for calories, protein, and other nutrients. First enter the number of families or beneficiaries, how many days per month the food is provided, and how many months per year the food is provided. For instance, a school feeding program may have 10,000 beneficiary children who are provided the foods for 20 days per month and for 9 months of the year. Then the cells would be filled in as shown here:

	A	B	C
1	<b>Commodity Calculations</b>		
2			
3	10000	# of Target Beneficiaries or Families	
4	20	# of Days Per Month	
5	9	# of Months	

Let’s go back to our family example. Below you will see the entries for 10,000 families who will receive food for 30 days/month and 12 months/year.

	A	B
1	<b>Commodity Calculations</b>	
2		
3	10000	# of Target Beneficiaries or Families
4	30	# of Days Per Month
5	12	# of Months

	A	B	C	D	E	F	G	H	I	J	K	
1	<b>Commodity Calculations</b>											
2												
3		10000	# of Target Beneficiaries or Families									
4		30	# of Days Per Month									
5		12	# of Months									
6	<b>Amount/Day</b>											
7	<i>(fill in one column only)</i>											
8	Beneficiary:	Family	Commodity Name	Calories	Protein	Water	Total lipid	Crackbohydrate	Fiber, total	Calcium	Iron	
9	0	0	Soy Flour, Defatted	0	0	0	0	0	0	0	0	
10	0	180	Textured Soy Protein	514.91	117	0	0.9	42.12	39.6	620	21.6	
11	0	0	Soy Protein Concentrate	0	0	0	0	0	0	0	0	
12	0	0	Soy Protein Isolate	0	0	0	0	0	0	0	0	
13	0	0	Sorghum 00 [MS]	0	0	0	0	0	0	0	0	
14	0	600	Corn Soy Blend [CSB]	2254.2	102.2	59.2	41.4	370.2	54	4916	104.94	
15	0	0	Beans, Black	0	0	0	0	0	0	0	0	
16	0	0	Beans, Great Northern	0	0	0	0	0	0	0	0	
17	0	0	Beans, Kidney, (Light Red, Dark Red, All Types)	0	0	0	0	0	0	0	0	
18	0	0	Beans, Navy (Pea Beans)	0	0	0	0	0	0	0	0	
19	0	0	Beans, Pink	0	0	0	0	0	0	0	0	
20	0	200	Beans, Pinto	630	41.6	22	2.2	126.8	48.8	242	11.8	
21	0	0	Beans, Small Red	0	0	0	0	0	0	0	0	
22	0	0	Bulgur [BUL]	0	0	0	0	0	0	0	0	
23	0	0	Bulgur, Soy Fortified [SP, Bul]	0	0	0	0	0	0	0	0	
24	0	0	Corn [Kernels, Soft]	0	0	0	0	0	0	0	0	
25	0	0	Coronut	0	0	0	0	0	0	0	0	
26	0	0	Coronut, Soy Fortified [CMSP]	0	0	0	0	0	0	0	0	
27	0	0	Corn Soy Milk [CSM]	0	0	0	0	0	0	0	0	
28	0	0	Corn Soy Milk, Instant [CSMI]	0	0	0	0	0	0	0	0	
29	0	0	Lentils	0	0	0	0	0	0	0	0	
30	0	0	Max Fat Dry Milk [MFDH]	0	0	0	0	0	0	0	0	
31	0	0	Peanut	0	0	0	0	0	0	0	0	
32	0	400	Rice	1460	26.4	46.4	2.8	320	5.2	112	3.2	
33	0	0	Rice [Parboiled]	0	0	0	0	0	0	0	0	
34	0	0	Sorghum	0	0	0	0	0	0	0	0	
35	0	0	Sorghum Grains, Soy Fortified [SPSG]	0	0	0	0	0	0	0	0	
36	0	400	Fortified Redford Vegetable Oil	3536	0	0	400	0	0	0	0.08	
37	0	0	Wheat	0	0	0	0	0	0	0	0	
38	0	0	Wheat Flour	0	0	0	0	0	0	0	0	
39	0	0	Wheat Soy Blend [WSB]	0	0	0	0	0	0	0	0	
40	0	0	Wheat Soy Milk [WSM]	0	0	0	0	0	0	0	0	
41	0	0	Yolaine	0	0	0	0	0	0	0	0	
42	0	0	Dry Peas	0	0	0	0	0	0	0	0	
43			<b>Total for Menu</b>	<b>8445.18</b>	<b>298.4</b>	<b>126.6</b>	<b>447.3</b>	<b>859.12</b>	<b>147.6</b>	<b>5970</b>	<b>141.62</b>	
44			<b>If for family (Average)</b>	<b>1407.53</b>	<b>48.4</b>	<b>21.1</b>	<b>74.55</b>	<b>143.187</b>	<b>24.6</b>	<b>995</b>	<b>23.6033</b>	
45			<b>average cal &amp; protein of Menu</b>	<b>69.1895</b>	<b>98.441</b>	<b>98.441</b>						
46				Calories	Protein	Water	Total lipid	Crackbohydrate	Fiber, total	Calcium	Iron	
47				× Cal	× min.pro	× grain.liquor						

Next, you can fill in some items in for grams per day. You will fill in only one column: either beneficiaries or families.

Continuing with our example, we will fill in the column for families and how much per day a family might receive of the commodities chosen. For our families who are very vulnerable, we might decide that we want to provide for about 2/3 of their calorie and about 100% of their protein needs.

Filling in the “families” column with their household amounts, we can see how much this household ration would provide at the bottom of the list. In the example here, the daily rations included:

- 180 grams textured soy protein
- 600 grams corn soy blend
- 200 grams pinto beans
- 400 grams rice

- 400 grams vegetable oil

This household ration provides:

- nearly 70% of calorie needs and
- nearly 100% of protein needs

	A	B	C	AG	AH	AI	AJ	AK	AL	AM	AN		
1	<b>Commodity Calculations</b>												
2													
3	10000	# of Target Beneficiaries or Family											
4	30	# of Days Per Month											
5	12	# of Months											
6	<b>Amount/Day</b>												
7	<i>(fill in one column only)</i>												
				<i>click on this cell and use arrow to go to for total nutrient values of each commodity in basket</i>									
8	Beneficiary:	Family	Commodity Name	Total Grams	MT/MO	MT/ORDER	COST/MT	Cart/Order	\$ Cart/calorie	\$ Cart/protein gram			
9	0	0	Sug Flour, Defatted	0	0	0	770 \$	-	0.00002333	0.0000164			
10	0	100	Yeastd Sug Powder	1000000	54	442	1980 \$	442,000.00	0.00007495	0.0000154			
11	0	0	Sug Protein Concentrate	0	0	0	3280 \$	-	0.00009662	0.0000550			
12	0	0	Sug Protein Isolate	0	0	0	4980 \$	-	0.00014497	0.0000607			
13	0	0	Sorghum 00 (HL)	0	0	0	1435 \$	-	0.00001634	0.0000000			
14	0	600	Coar Sug Blend (CSB)	6000000	188	2168	575 \$	1,242,000.00	0.00001530	0.0000334			
15	0	0	Beans, Black	0	0	0	575 \$	-	0.00002159	0.0000451			
16	0	0	Beans, Great Northern Black	0	0	0	775 \$	-	0.00002236	0.0000354			
17	0	0	Beans, Kidney, (Light Red, Dark Red, All Types)	0	0	0	825 \$	-	0.00002477	0.0000350			
18	0	0	Beans, Navy (Pea Beans)	0	0	0	755 \$	-	0.00002254	0.0000239			
19	0	0	Beans, Pink	0	0	0	775 \$	-	0.00002259	0.0000369			
20	0	200	Beans, Pinto	2000000	60	728	788 \$	504,000.00	0.00002059	0.0000335			
21	0	0	Beans, Small Red	0	0	0	559 \$	-	0.00002714	0.0000432			
22	0	0	Bulgur (Bul)	0	0	0	345 \$	-	0.00001009	0.0000210			
23	0	0	Bulgur, Sug-Fortified (SF, Bul)	0	0	0	385 \$	-	0.00001133	0.0000212			
24	0	0	Coar (Sorghm, bulk)	0	0	0	285 \$	-	0.00000704	0.0000304			
25	0	0	Coronut	0	0	0	444 \$	-	0.00001219	0.0000525			
26	0	0	Coronut, Sug-Fortified (CSNF)	0	0	0	464 \$	-	0.00001294	0.0000313			
27	0	0	Coar Sug Milk (CSM)	0	0	0	1115 \$	-	0.00002973	0.0000522			
28	0	0	Coar Sug Milk, Isolate (ICSM)	0	0	0	1148 \$	-	0.00002039	0.0000524			
29	0	0	Leaffle	0	0	0	775 \$	-	0.00002293	0.0000276			
30	0	0	High Fat Dry Milk (HFDM)	0	0	0	3388 \$	-	0.00009916	0.0000993			
31	0	0	Prax	0	0	0	378 \$	-	0.00001015	0.0000150			
32	0	400	Rice	4000000	128	1848	485 \$	1,512,000.00	0.00001329	0.0000683			
33	0	0	Rice (Packaged)	0	0	0	748 \$	-	0.00001995	0.0001038			
34	0	0	Sorghum	0	0	0	264 \$	-	0.00000765	0.0000235			
35	0	0	Sorghum Griffe, Sug-Fortified (SFG)	0	0	0	345 \$	-	0.00001023	0.0000199			
36	0	400	Vegetable Oil	4000000	128	1848	1978 \$	1,540,000.00	0.00001210	0.0000000			
37	0	0	Wheat	0	0	0	323 \$	-	0.00000984	0.0000210			
38	0	0	Wheat Flour	0	0	0	505 \$	-	0.00001307	0.0000490			
39	0	0	Wheat Sug Blend (WSB)	0	0	0	880 \$	-	0.00002257	0.0000372			
40	0	0	Wheat Sug Milk (WSM)	0	0	0	759 \$	-	0.00002099	0.0000299			
41	0	0	Wheat	0	0	0							
42	0	0	Yola Flour	0	0	0	1522 \$	-	0.000241512				
43			<b>Total for Month</b>	<b>2E+07</b>				<b>\$ 4,633,248.00</b>	<b>1.52395E-06</b>	<b>2.95799E-05</b>			
44			<b>Average per Family</b>	<b>3E+06</b>									
45			<b>Total Grams</b>										
46			<b>average cal per X of Month</b>										
47					69.11	0.98441	0.934						

The Commodity Calculations Sheet also allows you to estimate amounts to order and costs.

The metric tons (MT) that are needed per month and per order are listed in green for each of the commodities chosen.

Using the most recent USAID commodity calculator or using prices from recent bids on the USDA site that announces recent awards, you can change the prices to reflect the most recent information. The worksheet will calculate the cost per order as well as the cost per calorie and the cost per gram of protein for the food basket chosen.

At the bottom of the page the total product cost is shown. Just as with other portions of the spreadsheet, if a budget is exceeded, you can re-enter alternate

commodities and/or amounts to change the costs to meet the project needs.

Please note that each time you change the commodities, you should recheck to see that the full basket still meets the nutrient needs that you have set as a goal for the program.

### **Step 3. Nutrient Comparison to Requirements**

The next worksheet allows us to look at the full nutrition of the household or individual food basket and estimate how much of the food basket is likely to be consumed by each household member as well as the percentage of estimated nutrient requirements each of the household member is likely to receive in their portion of the food basket.

In this example, we were looking to provide about 2/3 of calorie needs, about all protein needs, and between 75-100% of most micronutrient needs. The estimates are based on the expectations that each household member would take exactly the percentage of the basket that is based on calorie needs. It is more likely that household members would eat more of some things and less of others, so we would look to an average of needs being met. In the case of iron, a very high percentage of iron needs are met for younger children, while older household members and female household members have less than 100% being met. If less iron is desired for the food basket, lower iron foods (such as rice or oil) could be increased while higher iron foods (such as textured soy protein or beans) could be reduced. This sheet allows you to go back to sheet 2 on Commodity Calculations and increase, decrease, or change commodity choices to further refine how well the food basket meets the nutritional needs of the targeted average family.

	A	B	C	D	E	F	G	H	I	J
1	<b>No data entry is required on this sheet!</b>									
2	Children (according to age group)	% of Basket	% Calories	% Protein	% Calcium	% Iron @	% Magnesium	% Zinc	% Selenium	% Vitamin
3	Infant									
4	0-6 Mo.	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
5	7-11 Mo.	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
6										
7	Children									
8	1-3 Years	10.22913257	69.10949264	129.1539173	122.1358429	241.4416258	292.028096	112.0713744	80.26860499	86.81123
9	4-6 Years	13.99345336	69.10949264	135.4566285	139.2348609	330.292144	328.3515907	123.2521421	88.89174655	118.7577
10	7-9 Years	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
11										
12	Adolescents									
13	Males 10-18 Years	21.44026187	64.20811018	74.12204816	98.46027949	159.8089413	146.9018134	99.28830547	84.12149803	136.4672
14	Females 10-18 Years	16.69394435	65.57365813	73.45335516	76.66372907	76.26439998	124.3277877	96.13999748	85.65277603	106.2569
15										
16										
17	Adults** (same as list on p 1.)	% of Basket	% Calories	% Protein	% Calcium	% Iron +	% Magnesium	% Zinc	% Selenium	% Vitamin
18	1	19.88543372	69.10949264	101.3110518	118.7160393	201.1553659	131.0082966	127.6076689	78.02108405	112.507
19	2	17.75777414	69.10949264	107.4345336	106.0139116	86.71917151	138.2620295	162.7916764	91.11104117	100.4695
20	3	0	#DIV/0!	#DIV/0!	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE

The final sheet is a resource sheet for the other sheets to draw on to make nutrient calculations. This sheet, **Commodity Nutrients**, lists the various commodities and their nutritional values according to USAID, USDA, and other resources. You can use this sheet to put in new commodities you may want to include in a food basket.

This spreadsheet was created for the World Initiative for Soy in Human Health (WISHH) by TCE Consulting Group. Please direct any comments or questions to Cade Fields-Gardner, Director of Services for TCE Consulting Group (contact [cfg@tceconsult.org](mailto:cfg@tceconsult.org)). The workbook will be updated regularly for commodities, pricing, and nutritional information and will be posted on the WISHH website at [www.wishh.org](http://www.wishh.org).