ANNEXES

Save the Children UK

Linear Optimisation Equations for the Cost of the Diet Software

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1 Introduction

The Cost of the Diet tool is a method and bespoke software developed by Save the Children UK to estimate the amount and combination of local foods that are needed to provide individuals or a family with foods to meet their average needs for energy and their recommended intakes of protein, fat and micronutrients. The method was developed as a response to research undertaken by Save the Children which demonstrated that the impact of traditional nutrition education programmes may be limited because of the economic constraints facing many households in low income countries.

The price and seasonal availability of all foods found in local markets in a specified livelihood, ecological or agricultural zone [1] are collected by a market survey of local traders. Interviews and focus group discussions are held with local women to understand typical dietary habits and the typical household size. This information is entered into the Cost of the Diet software which applies linear programming [2] routines generated by an open access linear programming solver [3] to create a hypothetical mixture of locally available foods that meet recommended energy and nutrient requirements whilst minimising the cost of the deit.

The software can calculate the lowest cost of four standard, theoretical diets :

- A diet that meets only recommended average energy requirements, called an energy only diet ;
- A diet that meets recommended intakes for energy, protein and fat, called a macronutrient diet ;
- A diet that meets recommended intakes for energy, protein, fat and 11 micronutrients, called a nutritious diet ;
- A diet that meets recommended intakes for energy, protein, fat and 11 micronutrients based upon typical dietary habits of households in the assessment site, called a food habits nutritious diet.

Two standard databases and three sets of locally specific data form the basis of the calculation. The first standard database is a food composition table which contains nutrient data on 3,580 foods and supplements derived from four main food tables : the Worldfood Dietary Assessment System published by the Food and Agriculture Organization (FAO) which

1. An area within which people share broadly the same pattern of livelihood or the ecosystem and agricultural environment is broadly homogenous.
2. A mathematical technique used for maximising or minimising a linear function of several variables, such as output or cost.
3. lp solve version 5.5.2.0

contains data on foods from six countries Egypt, Kenya, India, Indonesia, Mexico and Senegal ; a table of foods published by the United States Department of Agriculture (USDA) ; a table of foods from West Africa ; and a table of foods from Bangladesh published by the University of Dhaka. The foods are categorised into one of by one of fifteen food groups.

The second standard database contains the World Health Organization's (WHO) recommended average intake of energy and the recommended intake of micronutrients for 237 individuals : for girls, boys and children either sex aged between 1-6 months ; aged 6-8, 9-11 and 12-23 months ; by year of age for children between 2-18 years ; for men aged 18-29, 30-59 or 60+ years with a body weight of between 50 and 90kg for three levels of physical activity (light moderate and vigorous) ; and for women aged 18-29, 30-59 or 60+ years with a body weight of between 45 and 85kg for three levels of physical activity (light moderate and vigorous). There are also data for the additional energy and nutrients specified by the WHO for three stages each of pregnancy or lactation.

Using these two databases, the programme determines the least expensive diet when provided with :

- The price of locally available foods per 100g ;
- The specification of individuals or household members for whom the diet is required ;
- The maximum amount of each food that each individual can consume in order for the amounts recommended by the programme to remain realistic specified as portion sizes in grams/meal
- The minimum and maximum number of times a food item may be consumed per week

The programme applies the following assumptions :

- The energy provided by the diet must meet, but not exceed, the total energy requirements of the specified individual. For instance, if an average child aged 12-23 months requires 894 kcals of energy a day, the solver will identify a diet providing 894 kcals.
- The nutrient content of the diet must not be less than the nutrient specifications for each individual. For example, if a given child aged 9-11 months requires 54.0 mg of magnesium and 4.1 mg of zinc, then the solver will aim to meet these amounts from the diet.
- The solver should not exceed the upper limits specified for energy, vitamin A, vitamin C, niacin, calcium and iron for each given individual. This will prevent a diet being generated that could lead to an excess of energy or these nutrients.
- The amount and frequency with which different foods can be selected must fall between specified minimum and maximum value based upon portion size data and consumption frequency.
- The overall quantity of food included in the diet for a specified individual must not exceed a total weight.

2 Overview of the Linear Programming model

Linear programming in this context is a mathematical optimisation tool which uses an objective function to minimise the cost of a diet whilst satisfying the following constraints for :

- Energy
- Nutrients
- Portion sizes (the amount of each food that can be included in the diet)

- Food frequency (the number of times a food and food groups can be included in the diet per week)
- Total food weight (the total quantity in grams of food that can be included in the diet for an individual)

The programme will either establish a feasible solution, which means that all the linear constraints listed above are adhered to, or an un-feasible solution which means that a solution which respects all of these constraints does not exist and the closest values are presented.

The equations for the cost optimisation and the five constraints listed above are described in detail in the sections to follow. For all following mathematical equations :

i) X_{ij} represents the weight (in grams) of food item 'i' in food group 'j'.
ii) The mathematical symbol $\sum_{i=1}^{r}$ is the sum of all items across all subscript 'i' from 1 to r.
For example, $\sum_{i=1}^{3} A_i = A_1 + A_2 + A_3$.
iii) The mathematical symbol $\sum_{i=1}^{r}\sum_{j=1}^{n}$ represents the sum over all subscript 'j' from 1 to n and all subscript 'i' from 1 to r.
For example : $\sum_{i=1}^{2}\sum_{j=1}^{3} A_{ij} = \sum_{i=1}^{2} A_{i1}+A_{i2}+A_{i3} = \overbrace{A_{11}+A_{12}+A_{13}}^{i=1} + \overbrace{A_{21}+A_{22}+A_{23}}^{i=2}$.
Swapping the $\sum$ places does not affect the final answer.
iv) For X_{ij} defined as above, $\sum_{i=1}^{r}\sum_{j=1}^{n} X_{ij}$ represents the sum of all weights of all food items 'i' over all food groups 'j'.

2.1 Cost Optimisation

The most important function of the linear programming routine is to minimise the total cost of the diet for each individual or household members. The mathematical formula for this function is :

$$\sum_{i=1}^{r_j}\sum_{j=1}^{n} X_{ij} \times \text{cost}_{ij}$$

where :

i) cost_{ij} is the cost of food item 'i' in food group 'j'.

The solver is set to minimise the above expression, which represents the sum of cost for the corresponding amount of each food.

2.2 Energy constraints

The energy constraints are used to select locally available foods for a diet that provides the WHO estimated average requirements for energy per day, for each specified individual. The software should not create a diet that exceeds or falls below this requirement. The mathematical formula for this function is :

$$\sum_{i=1}^{r_j}\sum_{j=1}^{n} X_{ij} \times \text{energy}_{ij} = \text{denergy}$$

where

i) denergy is the desired total dietary energy content.

ii) energy_{ij} is the energy content of food item 'i' in food group 'j'.

2.3 Nutritional constraints

The nutritional constraints are used to select locally available foods for a diet that provides the recommended intake of protein, fat and 13 micronutrients specified by the WHO. These specifications are described as 'desired' nutrient requirements. The software is allowed to exceed these requirements if necessary but it should not exceed the specific upper limits imposed for vitamin A, niacin, vitamin C, calcium and iron. The mathematical formulae for the constraints are :

$$\sum_{i=1}^{r_j}\sum_{j=1}^{n} X_{ij} \times \text{nut}_{ijn} \geq \text{dnut}_n \qquad n \in N$$

$$\sum_{i=1}^{r_j}\sum_{j=1}^{n} X_{ij} \times \text{nut}_{ijn} \leq \text{unut}_n \qquad n \in N$$

where :

i) N is the set of nutrients we are interested in.
ii) $n \in N$ is the nutrient 'n' within the set of nutrients 'N'.
iii) dnut_n is the desired nutrient requirement for all nutrients 'n' of interest in N.
iv) unut_n is the upper limit for nutrient requirement for all nutrients 'n' of interest in N.
v) nut_{ijn} is the nutrient 'n' content per gram of food item 'i' in food group 'j'.

2.4 Portion size constraints

The amount of any single food that can be consumed at any one meal is limited by applying a portion size. These have been developed to try to create a balance between dietary diversity and moderate amounts of food and are based on a recommended maximum energy intake of 50 percent from carbohydrate foods, 30 percent from fats, 10 percent from fruit and vegetables and 10 percent from protein foods. A 'standard' portion size has been calculated for each food based upon the above criteria for a child aged 1-3 years. This weight of food is then multiplied by a factor that is calculated by dividing 2 standard deviations above the average energy requirement for a given individual by the average energy requirement of the child aged 1-3 years :

$$\text{Portion size scaling factor} = \frac{\text{Mean + 2 SD energy requirement of individual}}{\text{Mean energy requirement of child 1-3 years}}$$

$$\text{Portion size for individuals (g)} = \text{Portion size for 1-3 y child} \times \text{scaling factor}$$

2.5 Food frequency constraints

The number of times per week a portion of food can be included in a diet is limited by applying minimum and maximum food frequency constraints. For example, if the minimum constraint for chicken egg is set at 7 and the maximum is set at 14 this means that the software must include chicken egg in the diet no less than 7 times a week (once a day) but no more than 14 times a week (twice a day).

Using these constraints and the portion size (g/meal) information for a food, the software calculates the minimum and maximum weekly amount of each food (in grams) which can be selected for a diet by multiplying the portion size by the weekly frequency :

Maximum weekly amount (g) = average portion size (g) × frequency eaten per week

The mathematical formulae for the constraints are :

$$\begin{aligned} X_{ij} &\geq \min_{ij} \qquad i = 1, 2, ..., r_j \quad j = 1, 2, ..., n \\ X_{ij} &\leq \max_{ij} \qquad i = 1, 2, ..., r_j \quad j = 1, 2, ..., n \end{aligned}$$

where :

i) $\min_{ij}$ is the minimum portion size of food item 'i' in food group 'j'.
ii) $\max_{ij}$ is the maximum portion size of food item 'i' in food group 'j'.

2.6 Food group frequency constraints

The number of times per week a food from any given food group can be included in the diet is limited by applying a maximum food group constraint. This enables the user to adjust the frequency with which each food group can be consumed in a week. For all diets the maximum frequency is set at a default value of 105 times per week for all food groups. This gives the software the option to include up to 5 foods from a food group for 3 meals a day, 7 days a week. The mathematical formula for this fuction is :

$$\sum_{j \in S(s)}^{r_j} \sum_{i=1}^{r} \frac{X_{ij}}{a\nu_{ij}} \leq \text{fgmax}_s$$

where :

i) $a\nu_{ij}$ is the weight (in grams) of an average portion size of the specified food item 'i' in food group 'j'.
ii) $S(s)$ is the food group 's' within the set of food groups S.
iii) fgmax_s is the maximum number of servings in the food group 's'.

2.7 Total food weight constraint

The total quantity of food (in grams) that the software can include in a diet is limited by applying a total food weight constraint. To calculate this weight an upper limit has been based on the amount of food required to provide energy that is two standard deviations above the average energy requirement for each individual specified in the software, divided by the value for a low energy density diet which is 1 Kcal/g :

$$\text{TFW} = \frac{\text{2 SD above energy requirement of individual}}{\text{1 Kcal/g}}$$

The mathematical formula for this constraint is :

$$\sum_{i=1}^{r_j} \sum_{j=1}^{n} X_{ij} \leq \text{TFW}$$

where 'TFW' is the total food weight.

3 Conclusion

This documents aims to summarise the calculations that the Cost of the Diet software does, when estimating the cost, quality and composition of a diet. A major new development in version 2 of the Cost of the Diet method and software is the ability to change with ease the underlying constraints discussed in this document. This will enable users to generate What if? models to estimate the potential impact of changing constraints on the cost, composition, quality and affordability of a diet.These results could be used to inform and influence policies and programmes for both nutrition and food security and can contribute to both advocacy and debates at local, national and global levels.

Annex 2. The values of percentiles equivalent to standard deviations and vice versa, which can be applied to investigate the effect of the WHO specifications on the cost of the diet.

Percentile	S.D.
0.0000286	-5.000
0.0001	-4.753
0.0032	-4.000
0.0100	-3.719
0.1000	-3.090
0.1350	-3.000
1.0000	-2.326
2.0000	-2.054
2.2750	-2.000
3.0000	-1.881
4.0000	-1.751
5.0000	-1.645
6.0000	-1.555
7.0000	-1.476
8.0000	-1.405
9.0000	-1.341
10.0000	-1.282
11.0000	-1.227
12.0000	-1.175
13.0000	-1.126
14.0000	-1.080
15.0000	-1.036
15.8655	-1.000
16.0000	-0.994
17.0000	-0.954
18.0000	-0.915
19.0000	-0.878
20.0000	-0.842
25.0000	-0.674
30.0000	-0.524
35.0000	-0.385
40.0000	-0.253
45.0000	-0.126
50.0000	0.000

Percentile	S.D.
50.0000	0.000
55.0000	0.126
60.0000	0.253
65.0000	0.385
70.0000	0.524
75.0000	0.674
80.0000	0.842
81.0000	0.878
82.0000	0.915
83.0000	0.954
84.0000	0.994
84.1345	1.000
85.0000	1.036
86.0000	1.080
87.0000	1.126
88.0000	1.175
89.0000	1.227
90.0000	1.282
91.0000	1.341
92.0000	1.405
93.0000	1.476
94.0000	1.555
95.0000	1.645
96.0000	1.751
97.0000	1.881
97.7250	2.000
98.0000	2.054
99.0000	2.326
99.8650	3.000
99.9000	3.090
99.9900	3.719
99.9968	4.000
99.9999	4.753
99.9999714	5.000

Annex 3. The major and minor classification of food groups in the Cost of the Diet software, with some examples of sub-groups.

Major food group	**Minor food group**	**Food sub-group**
Grains and grain-based products	Cereal grains	Barley Buckwheat Fonio Maize Millet Oats Quinoa Rice Rye Semolina Sorghum Spelt Teff Triticale Wheat
	Grain flours Breads Pasta Noodles	
Roots and tubers	Roots	White roots Orange roots
	Tubers	White tubers Orange tubers
Legumes, nuts and seeds	Legumes	Beans and peas Lentils
	Nuts and seeds	Nuts Seeds
Meat and offal	Meat (flesh foods)	Red meat Wild game White meat
	Offal	
Fish, seafood, amphibians and invertebrates	Fish (marine or freshwater) Seafood Amphibians Insects	
Eggs and egg products		

Major food group	Minor food group	Food sub-group
Milk and milk products	Milk Dairy products	 Cheese Cream Milk powder Yoghurt
Vegetables and vegetable products	Vitamin A rich vegetables Other vegetables	Yellow or orange vegetables Green leafy vegetables
Fruit and fruit products	Citrus fruits Yellow or orange fruit Other fruit	
Oils and fats	Oils Fats	
Sugars and confectionary	Sugar Honey Confectionary	
Herbs, spices and condiments	Spices Herbs Condiments Flavourings Salt	
Beverages	Tea, coffee and plant extracts Sodas Alcoholic drinks	
Supplements and infant foods	Therapeutic milks Ready to use foods Infant foods Micronutrients	 RUTF RUSF Micronutrient powders Fortified foods
Composite dishes		

Annex 4. The bioavailability conversion factors for iron applied to foods groups in the Cost of the Diet software

Food	Percentage absorption	Factor applied to food	Justification/ explanation	Reference
Meat, fish, poultry and eggs	25%	0.25	The average absorption of haem iron from meat containing meals is about 25%. The absorption of haem iron can vary from about 40% during iron deficiency to about 10% during iron repletion.	34
				4
			Regarding including fish and poultry within 'meat': 'In weighing the evidence, the Panel took into account that there is generally good agreement on the enhancing effect of meat or fish on non haem iron absorption and that the studies provided showed that the addition of meat (from beef, pork, lamb or chicken) or fish to a meal enhances the absorption of non haem iron from the diet'.	35
Milk	11.75%	11.75	The percentage of iron availability in adults from cow's milk ranged between 4%, 9%, 19.5% (the midpoint between 4 and 19.5 has therefore been applied)	36
Plant foods	5%	0.05	Unable to find a specific absorption factor: Non-haem iron in cereals, vegetables, fruits, roots, pulses and beans forms the main part of dietary iron. The absorption is very much influenced by the individual iron status	34
			The WHO/FAO recommends 5% bioavailability for iron in a plant based diet, hence why we have used 5%	4
Fats and oils	25% for animal based fats/oils	0.25	The WHO/FAO recommends 5% bioavailability for iron in a plant based diet, hence why we have used 5%	4
	5% food plant based fats/oils	0.05		
Fortificant or supplemental iron	2% for elemental iron	0.02	As recommended by the World Food Programme	
	7% for Fe EDTA, Fe fumarate or Fe sulfate	0.07		
	5% for other iron fortificants or if form unknown	0.05		

Annex 5. The bioavailability conversion factors for calcium applied to foods groups in the Cost of the Diet software

Food	Percentage absorption	Factor applied to food	Justification/ explanation	Reference
Milk	32%	0.32		37
Grains, beans, roots and tubers	24%	0.24	Average of pinto, red and white taken	37
Other fruit and vegetables	48%	0.48	Average of bok choy, broccoli, Chinese cabbage, flower leaves, Chinese mustard greens and kale	37
High oxalate vegetables and fruit	5%	0.05		38
				39
All other foods	32%	0.32	As with the old software, very little research to suggest another option	
Fortificant or supplemental calcium	30%	0.30	As recommended by WFP	

Annex 6. The default portion sizes by food group included in the Cost of the Diet software

Food group	Portion size (g/meal)
Grains and grain-based products	60
Cereal grains	60
Barley	55
Buckwheat	50
Fonio	65
Maize	65
Millet	55
Oats	65
Quinoa	70
Rice	60
Rye	50
Semolina	50
Sorghum	60
Spelt	75
Teff	75
Triticale	50
Wheat	55
Grain flours	50
Breads	60
Pasta	60
Noodles	65
Roots and tubers	70
Roots	95
White roots	90
Orange roots	70
Tubers	65
White tubers	60
Orange tubers	80
Legumes, nuts & seeds	10
Legumes	20
Beans and peas	20
Lentils	15
Nuts and seeds	5
Nuts	5
Seeds	10
Meat and offal	20
Meat (flesh foods)	15
Red meat	15
Wild game	20
White meat	15
Offal	25
Fish, seafood, amphibians and invertebrates	25
Fish (marine or freshwater)	25
Seafood	30
Amphibians	50

Food group	Portion size (g/meal)
Insects	10
Eggs and egg products	40
Milk and milk products	15
Milk	100
Dairy products	10
Cheese	10
Cream	10
Yoghurt	45
Milk powder	13
Vegetables and vegetable products	75
Vitamin A rich vegetables	95
Yellow or orange vegetables	100
Green leafy vegetables	95
Other vegetables	65
Fruit and fruit products	40
Yellow or orange fruit	55
Other fruit	30
Citrus fruits	35
Oils and fats	10
Oils	10
Fats	10
Sugars and confectionary	10
Sugar	6
Honey	6
Confectionary	15
Herbs and spices	1
Spices	1
Herbs	1
Condiments	5
Flavourings	1
Salt	0.5
Beverages	1
Tea, coffee and plant extracts	1
Sodas	1
Alcoholic drinks	1
Supplements and infant foods	1
Therapeutic milks	1
Ready to use foods	1
RUTF	1
RUSF	1
Infant foods	1
Micronutrients	1
Micronutrient powders	1
Fortified foods	1
Composite dishes	100

Annex 7. Database of standard portion sizes which have been calculated using a combination of the European Food Safety Authority's Comprehensive European Food Consumption Database and a review of portion data by Save the Children.

Mean value for children	Food group name aged 1-3 years (g/meal)	Comments
Cereals	95	Taken from analysis on the European food portion size database
Vegetables	67	Taken from analysis on the European food portion size database
Roots and tubers	52	Taken from analysis on the European food portion size database
Legumes	73	Taken from the average of the data from Save the Children's database from 9 data points
Fruit	88	Taken from analysis on the European food portion size database
Meat	46	Taken from analysis on the European food portion size database
Fish	53	Taken from the average of the data from Save the Children's database from 16 data points
Milk	199	Taken from analysis on the European food portion size database
Eggs	47	Taken from the average of the data from Save the Children's database from 15 data points
Sugar	15	Taken from analysis on the European food portion size database
Fat	12	Taken from analysis on the European food portion size database
Fruit or vegetable juices	90	Taken from analysis on the European food portion size database
Non-alcoholic beverages	37	Taken from analysis on the European food portion size database
Herbs and spices	5	Taken from analysis on the European food portion size database
Infant foods	96	Taken from analysis on the European food portion size database
Composite dishes	15	Taken from analysis on the European food portion size database
Snacks	17	Taken from analysis on the European food portion size database
Yoghurt	100	Taken from analysis on the European food portion size database
Breads	43	Taken from analysis on the European food portion size database
Cheese	14	Taken from analysis on the European food portion size database
Citrus fruits	5	Taken from analysis on the European food portion size database

Annex 8. Family members chosen from the WHO database of average energy specification used to create the 'Rest of the World' HEA/CotD standard families.

		Number of family members						
		4	5	6	7	8	9	10
Household member	**Kcal/day**	**Individuals**	**Individuals**	**Individuals**	**Individuals**	**Individuals**	**Individuals**	**Individuals**
Woman is lactating	460	X	X	X	X	X	X	X
Baby (either sex) 12-23 months	894		X	X	X	X	X	X
Child (either sex) 4-5 years	1,300							X
Child (either sex) 5-6 years	1,400						X	
Child (either sex) 6-7 years	1,500					X		X
Child (either sex) 7-8 years	1,625				X		X	
Child (either sex) 8-9 years	1,763			X		X		X
Child (either sex) 9-10 years	1,913		X		X		X	
Child (either sex) 10-11 years	2,075	X		X		X		X
Child (either sex) 11-12 years	2,250		X		X		X	
Child (either sex) 12-13 years	2,413			X		X		X
Child (either sex) 13-14 years	2,575				X		X	
Child (either sex) 14-15 years	2,725					X		X
Child (either sex) 15-16 years	2,838						X	
Child (either sex) 16-17 years	2,913							X
Man, 30-59y, 50 kg, moderately active	2,750	X	X	X	X	X	X	X
Woman, 30-59y, 45 kg, moderately active	2,300	X	X	X	X	X	X	X
Total average energy specification		**8,437**	**10,524**	**12,612**	**14,724**	**16,837**	**18,962**	**21,037**

Annex 9. Family members chosen from the WHO database of average energy specification used to create the 'Asia' HEA/CotD standard families.

		Number of family members						
		4	5	6	7	8	9	10
Household member	**Kcal/day**	**Individuals**	**Individuals**	**Individuals**	**Individuals**	**Individuals**	**Individuals**	**Individuals**
Woman is lactating	460	X	X	X	X	X	X	X
Baby (either sex) 12-23 months	894	X	X	X	X	X	X	X
Child (either sex) 5-6 years	1,400							X
Child (either sex) 6-7 years	1,500						X	
Child (either sex) 7-8 years	1,625					X		X
Child (either sex) 8-9 years	1,763				X		X	
Child (either sex) 9-10 years	1,913			X		X		X
Child (either sex) 10-11 years	2,075		X		X		X	
Child (either sex) 11-12 years	2,250			X		X		X
Child (either sex) 12-13 years	2,413				X		X	
Child (either sex) 13-14 years	2,575					X		X
Child (either sex) 14-15 years	2,725						X	
Child (either sex) 15-16 years	2,838							X
Man, 30-59y, 50 kg, moderately active	2,750	X	X	X	X	X	X	X
Woman, 30-59y, 45 kg, moderately active	2,300	X	X	X	X	X	X	X
Woman, >60y, 45 kg, moderately active	2,050	X	X	X	X	X	X	X
Total average energy specification		**8,454**	**10,487**	**12,574**	**14,662**	**16,774**	**18,887**	**21,037**

Annex 10. Example of a Cost of the Diet data collector training schedule

When		Activity	Where
Day 1	Morning	Introductions, team building exercises and setting the rules of the training	Training centre
		Introduction to the Cost of the Diet and study objectives	
		Explain the food list	
	Afternoon	Compile the food list	
		Discuss the seasons, typical household size and the village and market survey sites that have been selected	
Day 2	Morning	How to conduct a market survey (presentation)	Training centre
		Market survey role play	
	Afternoon	How to conduct interviews and focus group discussions (presentation)	
		Interview and focus group discussion role play	
Day 3	Morning	Travel to Market Field Trial	Field
		Field Trial: Practice Data Collection	
	Afternoon	Checking and consolidating data / revising food list	Training centre
		Feedback and questions	
		Food list revision	

Annex 11. The equipment needed for data collection

It is important to use a precise and accurate scale to weigh foods in the market (and possibly during the food consumption interviews, to estimate portion sizes). To weigh small foods under the weight of 5kg we suggest purchasing Tanita KD-400SV scales because they are easy to carry, precise (to 1g) and easy to use. For food items above 1kg we advise purchasing a set of hanging (Salter) scales.

The equipment required during the training and data collection is listed below:

One per data collector for training:
Pen
Pencil and pencil sharpener
Eraser
Notebook
Handouts

For training room:
Stapler
Staples
Ream of flip chart paper
Box of marker pens
Flip chart stand
Long table for photocopies and other resource materials
Box of marker pens
Blue tack or scotch tape
LCD projector
Ream of A4 paper
Access to a printer

One per field team (market survey):
Spare pencils
Spare Rubbers
Ruler
Tanita KD-400SV scales (1)
Salter/spring scales (1)
5 L measuring jug (1)
Clip board (2)
Market survey data collection forms
Letter/ document describing the objectives of the assessment and how the information will be used
Petty cash to purchase food items
Equipment backpack (1)

One per field team (interview and FGD):
Spare pencils
Tanita KD-400SV scales (1)
5 L measuring jug (1)
Clip board
Letter/ document describing the objectives of the assessment and how the information will be used
Equipment backpack (1)

REFERENCES

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COST OF THE DIET

L'outil « Coût de l'alimentation » est une méthode innovante développée par Save the Children sous forme d'un logiciel spécial afin de comprendre dans quelle mesure la pauvreté influe sur la capacité des personnes et des ménages à couvrir leurs besoins en énergie et en éléments nutritifs. Cette méthode a été élaborée en réponse à des recherches entreprises par Save the Children, qui ont montré que les programmes d'éducation nutritionnelle traditionnels avaient eu un impact limité ; plus en raison de la pauvreté que par manque de connaissances.

L'outil «Coût de l'alimentation» estime la quantité, l'association et le coût des aliments locaux nécessaires pour couvrir les besoins énergétiques moyens des personnes et des familles, ainsi que les apports en protéines, en matières grasses et en micronutriments recommandés. Une évaluation peut fournir des données contextuelles sur l'accès des aliments nutritifs par les ménages les plus pauvres. Elle peut être utilisée lors de la conception de programmes ; le développement de politiques ; la défense d'intérêts ainsi que comme signal d'alarme précoce.

Ce guide a pour but de fournir à un utilisateur les informations nécessaires pour réaliser une évaluation à l'aide de l'outil « Coût de l'alimentation ». Il s'adresse à des nutritionnistes expérimentés sur le terrain et en analyse de données.

Pour plus d'informations : www.savethechildren.org.uk/costofthediet

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