PREPARING FOOD AND NUTRITION/PRIMARY HEALTH CARE PROGRAMS: EXPERIENCES FROM CAMEROON AND LIBERIA.

Running head: Preparing Nutrition Programs

Claudio Schuftan

Department of Pediatrics
LSU Medical School
1542 Tulane Avenue
New Orleans, LA 70112, USA.

Address proofs to: Claudio Schuftan, Department of Pediatrics, LSU Medical School, New Orleans, LA 70112, USA.

ABSTRACT

Plans for national food and nutrition/primary health care programs (PHC) were prepared for both Cameroon and Liberia, in each case by methods that were applied and completed in a period of 7 to 10 weeks of full-time work. Suggested guidelines to help identify the major problems in the areas of food, nutrition and PHC and their immediate and more basic determinants involved assessing existing documentation gathered from different ministries and local international agencies. The steps followed in the development of operational strategies included a movable card system of organization. More detailed plans of operations introduced a final package of interventions. Three appendices give an abbreviated procedure for setting up a data base that proved helpful to the author in the final choice of interventions, both in Cameroon and in Liberia.

Key words: Food, Nutrition, Primary Health Care, Causes of Hunger, Nutrition Planning, Malnutrition, Cameroon, Liberia.

INTRODUCTION

When charged with analyzing a complex situation, such as understanding in a short time the overall context in which a new sectoral intervention is to be immersed, planners are forced to organize their work quickly, logically and sequentially, at the same time being innovative and flexible. Time-sparing shortcuts are needed in the otherwise time-consuming planning process. In formulating food and nutrition/primary health care (PHC) plans in Cameroon and Liberia, the author's approach to coping with that challenge in those two concrete situations in Africa was basically to organize his work along the lines of three of the classical stages of the planning process.

IDENTIFYING THE MAJOR PROBLEMS AND THEIR DETERMINANTS

In this first stage, the major food and nutrition/PHC problems of each country were identified and characterized using available data. This assessment required a series of initial courtesy visits to different ministries and local international agencies to gather existing documentation. In any such effort, at least the relevant departments in the ministries of Health, Agriculture, Education and Planning (including census or statistics bureaus) must be visited, as well as the pertinent local representatives of UN agencies (WHO, UNICEF, FAO, UNDP, World Bank), other locally represented multilateral donors (i.e., EEC, OPEC), bilateral donors (i.e., USAID, SIDA, CIDA, NORAD, DANIDA) and private voluntary agencies. Relevant university departments and research institutes were also visited during this first stage.

This exercise, which took 10 working days, yielded between 20 and 35 important documents that somehow directly or indirectly reviewed and analyzed information relevant to understanding the magnitude of and the problems behind malnutrition. A number of repetitions were found in those documents,

as well as other inconsistencies and even contradictions in the figures presented. Nevertheless, the more credible source was easily identifiable after some additional inquires; repetitions did nothing but reinforce some of the more salient aspects.

The types of documented information gathered in both countries included the following: diagnostic assessments of the agricultural and animal husbandry sectors, provisional food balance sheets, regional food consumption surveys, proceedings of nutrition seminars, socioeconomic characteristics of household surveys, food prices and urban income surveys, government food security strategies, food marketing information, information on health statistics (i.e., morbidity tables, infant mortality and birth weights), food storage problems, World Food Program and Catholic Relief Services national programs, reports from different consulting missions on various related topics, statistical handbooks, production estimates of major crops, census data, national nutrition survey, prospective studies on staple food self-sufficiency, food import data (including infant foods), role of women in food marketing, and a few others.

During these two initial work weeks, and as long as was necessary thereafter, the author intensely concentrated on reading the documents. As he did so, he used a yellow marker or any other marking device to mark the most relevant paragraphs or sentences and tables or figures in the documents read. The focus in this highly specialized selection of relevant information is to identify indicators that characterize the situation, and to identify <u>both</u> the suspected macro- and the more immediate micro-determinants of the existing poor health and nutrition situation (as, in part, subjectively seen or interpreted by the planner. . .).

Next, a "cut and paste" job was started. The information marked was photocopied and cut out, making sure that each clipping kept the name and

page number of the reference document. The clippings were then gathered, reread, and classified by topic under pertinently titled headings.

In the case of Liberia, the information was organized under 13 headings and became part of a 30-page document titled Basic Background Information for a Food and Nutrition Plan in Liberia (Interministerial Technical Committee on Food and Nutrition Planning, 1982a). The 13 headings were the following: demographic data, agricultural data (general, rice, minor crops, cash crops, fisheries, livestock, research), credit and marketing structures in the food and non-food sectors, transportation situation, consumer price index, foreign trade: imports and exports, government finance, foreign aid and foreign debt servicing, the problems of malnutrition, health and education statistics, recommendations of previous groups, minimum cost diet, and women, food and development.

Altogether, the data in the background document helped to better understand the general situation in the country, especially the macro-economic constraints, in the light of which a food and nutrition policy must be based for it to stay realistic and viable.

In the case of Cameroon, a prior experience, the summarized relevant information was not rearranged by topics but was presented under the title of the documents reviewed, resulting in a 96-page document titled Document d'Information de Base pour le Planning Nutritionnel au Cameroun (Ministere de L'Economie et du Plan, 1980).

During this process of preparing the background document, repeat or new visits were made to experts in the different fields to verify data and to collect any missing information, especially when information gathered was unclear or contradictory. A simplified Delphi technique (polling of experts) can be used for this purpose.

From what was learned in both the Cameroonian and Liberian experiences, and based on information that was actually found in the documents reviewed, an extensive checklist of relevant information directed toward characterizing the existing food and nutrition/health situation and toward identifying the macro- and the more immediate micro-determinants of the same situation was designed (Appendix A).

During the initial courtesy visits the author requested the ministries most directly involved with this work on food, health and nutrition (at least the ministries of Health, Agriculture, Education and Planning) to nominate one representative to work 3 full-time days a week with him in what became a core group of planners. This team worked together during the 7 to 10 weeks that the process took. All the persons in government and non-governmental agencies initially visited were requested at that time to become members of an extended group of policy reviewers.

The core group began meeting regularly as soon as the first preliminary draft of the Basic Background Document was ready. This began generating a concensus on the document's content and also helped to identify gaps or lack of clarity in the information that core group members could then help fill and/or double-check with other experts. Roughly at the end of the first month, a revised first draft of the Basic Background Document was typed, duplicated, and sent to all members of the extended group plus the pertinent ministers. A meeting of the extended group was called for a few days later (usually with an attendance of 15 to 20 persons). The discussion of the document became the sole item on the agenda. This meeting helped to correct mistakes, added valuable new information to the document, and identified a few additional existing documents not previously known to members of the core group. Members of this larger group were sometimes surprised about some of the information

presented at this meeting, often declaring that they had been ignorant about some of the problems presented and about the more obvious linkages between their determinants and their relationship to the problems of hunger and malnutrition seen in the country.

The revised first draft of the background document was then amended one last time, incorporating all additions and changes. This final document thus now had the sanction and the concensus of the experts in the extended group. The revised copy was subsequently sent to all members and pertinent ministers.

Toward the end of the Background Document, previous recommendations made by other groups or individuals, found in the review of documents, were presented as well with the intention of reactualizing some of them for the time when the plan was to be finally drawn up. A critical look at ongoing programs trying to do something about the various problems identified could also be added at the end of such a background document, but this was not done in our case.

Interestingly, the mere reading of the final background document very strongly pointed toward needed corrective measures, both at the macro and micro levels. Problems, bottlenecks, and constraints easily became obvious to the keen and critical reader. Priorities also began to become apparent. In that sense, the Basic Background Document proved to be effective as an eye-opener and a tool to be used in raising the level of consciousness of technical personnel and some of the decision makers.

DEVELOPMENT OF AN OPERATIONAL STRATEGY

Work with the core group continued thereafter, still 3 times a week, and at that point actions were proposed to remedy each of the problems or

constraints identified in the Background Document. The order and sequence in which this was done was unimportant at that intermediate stage.

A special system of "cards" was developed for this purpose while working on the Liberian Plan. The cards were used to describe each proposed action. A sample card is shown in Appendix B.

With the text of each proposed intervention in each card, the following checklist was appended:

- Its proper classification (agricultural, economic, health, educational or other).
- The priority (A or B) given that intervention during the preparation of the plan.
- Where precisely the proper justification for such intervention could be found (most of the times it was found in the Basic Background Information Document).
- The expected impact of the intervention on reducing malnutrition if carried out (low, medium or high; early or late).
- The specific activities required to launch and implement the intervention (lobbying, education, financing, action, training or other).
- The indicator (s) of progress that would allow objective evaluation of whether the intervention is on-target.
- The person of the core-group responsible to follow the specific intervention from advocating for it to the beginning of its implementation.
- The implementing ministry(ies) or agency(ies).
- The possible financing agency(ies) besides the government.
- The approximate cost of the intervention (in dollars).
- The deadline for getting the intervention under way as a means to evaluate whether the activities leading to its implementation are on-schedule, and
- The training needs for the intervention (who and at what level).

A series of 73 cards, each addressing one specific problem or constraint identified, were prepared for Liberia. This procedure certainly represents

an "unorthodox" planning methodology because it goes from the particular to the general.

The way the 73 cards led to a general strategy was by classifying them and grouping them according to the intervention sectors where they best fit. This was done by displaying all cards in 5 columns, on the wall, with the headings of Economic, Agricultural, Health, Educational and "Other" interventions. By presenting the whole plan with cards on the wall, the cards could be frequently shifted to make them fit in the best slot or place; when their most appropriate locations were determined, a coherent strategy or program could finally be articulated with assigned priorities and suggested implementation sequences in an extremely visual manner (on the wall, as if using a strategy board).

Once the cards were tentatively placed in coherent order and sequence, through reviews with the core group, and a strategy was becoming more apparent, the cards were taken off the wall and typed in sequential order. The document that emerged from this exercise was sent to all members of the extended group (and ministerial cabinets) for review and a second meeting of this group was called for a few days later. A cover letter requested that they read the draft and come prepared to propose any changes, deletions, or additions they saw fit by looking at the plan from their own individual and sectoral perspectives.

The Liberian experience showed that several members of the extended group found the proposed strategy "too ambitious and non-realistic." They suggested that the core group rearrange the recommended actions into two sets: one set of general recommendations and one set of more specific interventions. A number of specific changes in the wording and content of specific cards were also suggested and adopted.

The core group went back to work after this second meeting of the extended group and split the 73 original cards into two groups: 37 of them were grouped under the title "Policies Under Which the Food and Nutrition Plan Will Have Its Best Chances of Succeeding." This set mostly contained actions addressing the macro-determinants of malnutrition. The other 36 cards were grouped under the title "Proposed Interventions" and mostly contained actions addressing the corresponding micro-determinants. The latter set was the one that was later picked for actual (or eventual) implementation. In each set, the 5 column headings were maintained. (See Appendix C.)

The document thus rearranged was again sent to members of the extended group and a final meeting was called to approve its contents as the final program of action. Copies then went to the ministers' cabinets.

The final version of the operational strategy was made up of: a) an introduction highlighting that the problems of malnutrition were multidisciplinary and more on the demand side than on the food supply side, b) a short summary of the past and present food/nutrition/health situation in the country with an emphasis on the problems faced by the traditional (food producing) agricultural sector (including the problems of urban migration), c) the overall goals and purposes of the food and nutrition/PHC plan for the coming 5 years, d) the program of action, and e) the proposed evaluation and feed-back activities.

(For an alternative, more complete format of presenting the same information in an operational strategy, see Schuftan, 1983a).

DEVELOPMENT OF A PLAN OF OPERATIONS

Based on the program of action described in Appendix C, a detailed plan of operation needed to be prepared before submitting the plan for approval,

funding, and implementation. In this plan of operation each intervention was described in detail, emphasizing the role of the community itself in launching and maintaining the specific program activities; specific quantified objectives were set and indicators of progress were established for proper evaluation.

A Pert Chart was then prepared, establishing the exact desirable sequence in which activities should be implemented, at least during the first year of operations of the plan. This exercise could then be repeated yearly after periodic reassessments of the strategy based on the ongoing evaluation and feedback process proposed.

A detailed plan of operation was not developed for Cameroon or for Liberia. In both cases the operational strategy was incorporated into the respective National Development Plans (5-year plan in Cameroon, 1982/86, and 4-year plan in Liberia, 1983/86) (Ministere de L'Economie et du Plan, 1981; Interministerial Technical Committee on Food and Nutrition Planning, 1982b), but the specifics of the plan's implementation were not developed at that time and were left for a later stage.

Acknowledgements: The author appreciates the many dedicated government officers and representatives of non-governmental agencies with whom he closely worked in both countries and without whose help this work would have been impossible.

REFERENCES

Interministerial Technical Committee on Food and Nutrition Planning (1982a). Basic Background Information for a Food and Nutrition Plan in Liberia (mimeo). Monrovia, Liberia.

Interministerial Technical Committee on Food and Nutrition Planning (1982b). Recommended National Food and Nutrition Plan for Liberia (mimeo). Monrovia, Liberia.

Ministere de L'Economie et du Plan (1980). (mimeo). Document D'Information de Base pour le Planning Nutritionnel au Cameroun (mimeo). Direction de la Planification, Younde, Cameroun.

Ministere de L'Economie et du Plan (1981). Situation Alimentaire du Pays et ses Perspectives (mimeo). Tome II Ve. Plan, Direction de la Planification, Yaounde, Cameroun.

Schuftan, C. (1984a). Suggested Guidelines for the Preparation of Food and Nutrition/PHC Proposals under the Auspices of the Joint UNICEF/WHO/ Government of Italy Program. Prepared for the JNSP.

Schuftan, C. (1983b). Report to the International Nutrition Unit of the Department of Health and Human Services. (mimeo) Rockville, MD.

APPENDIX A:

ASSESSING THE NUTRITIONAL PROBLEMS (Schuftan, 1983b)

The assessment that follows is important in setting a frame for the interventions to be chosen in that it basically helps us:

- To determine the magnitude of each of the problems,
- To broadly identify the causes of and the factors that contribute to these problems that are amenable to correction, and
- To put in perspective to what extent a food and nutrition component in PHC can have an impact in solving some of the problems identified.

In the assessment process, an effort should be made to determine specifically which groups in the population are more likely (or at risk) of being affected by the problems identified and when (in terms of season). These vulnerable groups need to be identified in each country in order to plan for direct interventions to alleviate their specific problems.

Based on previous public health experience, attention should be focused on the major health/nutrition problems, as classified into four groups, namely:

- Protein-energy malnutrition (macronutrient deficits)
- Nutritional anemias
- Vitamin A deficiency
- Goiter and iodine deficiency

(micronutrient deficits)

The blank data base presented below departs from the assumption that most of these data are likely to be found in the country, often coming from different sources (as was the case in Cameroon and Liberia). The type of data that can be used to gather the information below does not have to come

from national averages when such information is not available; it can come from smaller surveys or studies carried out in the country or from estimates given by local experts in the field. Finally, not all the information requested may be available. That should not discourage the user of the data base. Many appropriate decisions can still be made with incomplete data or educated guesses of some variables. Therefore, if the information is not readily available, the user is encouraged to seek some help from local knowledgeable informants, either at the ministerial or academic level.

THE PROBLEMS

1. Protein-energy Malnutrition:

a. In underfives:

(i) Outcome indicators of chronic malnutrition:

Anthropometric data:

Wt/Age:	Urban	Rural	0-6m	6-12m	12-24m	24-60m
% children under 60% of standard wt.:	___%	___%	___%	___%	___%	___%
% children at 60-80% of standard wt.:	___%	___%	___%	___%	___%	___%
Total % under 80% st.:	___%	___%	___%	___%	___%	___%

Wt/Age:

By province:

% children under 80% of standard wt:	x	x	x	x	x
	___%	___%	___%	___%	___%

By tribal affiliation:

	x	x	x	x	x
	___%	___%	___%	___%	___%

Seasonality: Season of highest prevalence of malnutrition is from _____ to _____.

Specify in which regions of the country:

Ht/Age:

	Urban	Rural	0-6mo.	6-12m	12-24m	24-60m
% children under 90% of standard ht:	___%	___%	___%	___%	___%	___%

By province:

	x	x	x	x	x
	___%	___%	___%	___%	___%

By tribal affiliation:

	x	x	x	x	x
	___%	___%	___%	___%	___%

Mortality data:

See demographic data below.

(ii) Proximate determinants of the above outcomes

Without pretending that the following factors are all the precipitating determinants, these are the ones important in a PHC context for which one can reasonably assume some data will be available.

Conditions responsible for poor utilization and losses of nutrients: (In children under 5 years of age)

diarrhea:

	Urban	Rural
incidence:	___%	___%
prevalence:	___%	___%

seasonality: season of highest prevalence is from _____ to _____.

Approximate % of infant mortality due to malnutrition/diarrhea: ___%

Approximate % of mortality 1-4 years due to malnutrition/diarrhea: ___%

Parasitic infestation:

Ascaris: prevalence Urban: __%
Rural: __%

Other worms: prevalence Urban: __%
Rural: __%

Malaria: prevalence Urban: __%
Rural: __%

By region:	x	x	x	x	x
Prevalence:	__%	__%	__%	__%	__%

Immunizable diseases:

Measles:

	Urban	Rural
incidence:	__%	__%
prevalence:	__%	__%

Approximate % of mortality 1-4 years due to measles: __%.

Miscellaneous:

Is there a correlation between malnutrition and adequacy of drinking water: Yes ___ No __

Is there a correlation between malnutrition and the use of latrines?
Yes __ No __

Conditions responsible for inadequate nutrient intake:

Weaning practices: (If regional or tribal differences, break down information).

	Up to 5 months	up to 11 m.	Up 24 m.
% mothers breastfeeding	____%	____%	____%

Mean age of addition of first solid foods to child's diet: ___ months.

% children receiving some solid food supplements at age 6 mos: ___%

% children being exclusively breastfed at age 12 months: __%

Average number of meals eaten a day by children after weaning:
(at around age 18 months)

1 2 3 4

List most frequently used weaning foods in the country:

starches (paps)	Protein rich foods	Fruits & Vegetables	Oils

Infant formulas import figures for last year: $ = Tons.

Have these imports tended to increase in the last few years? Yes __ No __

Are infant formulas and commercial weaning foods advertised through radio, posters and billboards? Yes __ No __

Miscellaneous:

Estimated per capita daily calorie supply as % of standard FAO recommendation (2200 cals): %.

Food Balance sheet data:
Daily cals available: ____ cals/capita
Daily proteins available: ____ g/capita
Daily iron available: ____ mg/capita
Daily vit A available: ____ Intl. Units/capita

Feeding Programs in the country: (emphasis on pre-school and maternal feeding programs)

World Food Program activities in the country: Yes __ No __

If yes, give detail of recipients, quantities distributed and coverage.

PL 480 programs? Yes __ No __

If yes, give details, quantities, distributed & coverage.

School breakfast programs? Yes __ No __
Details, number served and % schools covered.

School lunch programs? Yes __ No __
Details, number and % schools covered.

b. Maternal malnutrition:

(i) Outcome indicators:

Anthropometric data: (If relevant, breakdown data by province and tribe).

	Urban	Rural
% mothers with arm circumference below 22.9 cm:	___%	___%
% mothers under 150 cm of height:	___%	___%
Average wt. gain by mothers during pregnancy in kg or lbs: ___ kg ___ lbs		
Prevalence of low birth weights: (BW below 2500 g)	___%	___%

Seasonality: season of highest prevalence of maternal malnutrition from _____ to _____.

Mortality data:

Neonatal mortality rate (1st month of age): ___%

% of infant mortality rate represented by neonatal mortality: ___%

(ii) Proximate determinants of the above outcomes:

	Urban	Rural
Average parity (No. of childr		

Maternal and child malnutrition more frequent in illiterate mother?: Yes __ No __

Estimated % of mothers not receiving 100% of caloric requirements during last trimester of pregnancy: ___%

c. Kwashiorkor:

(i) Outcome indicator:

	Urban	Rural
incidence:	___%	___%
prevalence:	___%	___%

Seasonality: Kwashiorkor more frequently seen from _____ to _____

Age range of major incidence of Kwashiorkor: _____ to _____ months.

(ii) Proximate determinants:

Major staple(s) used for weaning: cassava ____ plantain____ rice ____

other ____

2. Nutritional Anemias:

a. In underfives and mothers:

(i) outcome indicators:

	Urban	Rural	Age 6-24mos.	Age 24-60 m
% children with less than 12g/dl of hemoglobin:	___%	___%	___%	___%
% mothers with less than 12g/dl of hemoglobin:	___%	___%		

(Breakdown by provinces and tribal affiliation, if possible).

(ii) Proximate determinants: (in overall population)

	Urban	Rural
Malaria prevalence:	___%	___%
Hookworm prevalence:	___%	___%
Average childspacing (months):		
Estimated % of low Fe intake in women and children:	___%	___%

3. Vitamin A Deficiency:

	Urban	Rural
Prevalence of blindness:	___%	___%
Prevalence of any lesser vitamin A deficiency related eye signs = (Bitot spots, xerophthalmia and keratomalasia)	___%	___%

Geographic areas of the country where the problem is most prevalent:

Is palm oil used in the regular diet of some sectors of the population in the country? Yes __ No __

4. Goiter and Iodine Defiency:

Goiter prevalence by geographic area:

THE CAUSES

The causes of malnutrition can arbitrarily be classified into six categories, namely:

1. Socioeconomic causes
2. Political causes (related to government policies)
3. Agricultural causes
4. Health and environmental causes
5. Educational causes (includes cultural determinants)
6. Administrative, managerial, and infrastructural causes

The ordering of the above causes in the sequence shown probably reflects their order of magnitude in the perpetuation of the problem.

The planner should try to identify these causes to put the problem of malnutrition, and the chances of doing something about it, in the proper perspective for each particular country. This exercise will help to better design appropriate food and nutrition/health interventions with special reference to PHC.

A rather extensive data base is needed to accomplish the above objective. Based on past experience, a list of essential data to be collected is recommended. These data can be successfully used, whether directly in the selection and design of interventions during the planning process, or as important advocacy tools in the sensitization of technicians and decision makers.

The data are grouped under the heading of the closest causal category they contribute to qualify and/or quantify. (See categories above). The relevance of the information needed to describe or measure each of the major determinants of malnutrition is most of the times self-explanatory.

The data base starts with a section on overall demographic information that is needed as a general background for any development plan to more exactly describe what kind of a population one will be dealing with.

What follows is a listing of the desirable information to be collected from available sources. It is not necessary that all information be compiled; the list is rather a blueprint leading to the most comprehensive analysis possible in each circumstance since not all of this information is applicable to every individual country. Where possible, trends over time should be indicated along with the most recent data. (The latter may often only be estimated by qualified local experts).

1. Demographic Data:

	last census (Date:)	present estimated	% of total at present	
Population: Total:			100%	
Per province, county, or region:			___%	
			___%	
			___%	
			___%	
			___%	
Urban:			___%	
Rural:			___%	
Under 1 year of age:			___%	
Under 5 years:			___%	___% rural
Under 14 years:			___%	
Between 15 and 64 years (working age):			___%	
Women 15-44 years (child-bearing age):			___%	___% rural
Population growth between last census and present:				
Yearly total population growth last year:	-	-	___%	
Estimated % urban population growth last year: (indicator of urban migration)	-	-	___%	
Per capita income: (GNP per capita)	$ /year	$ /year	-	
Real per capita income growth rate last year:	-	-	___%	
3 highest population density provinces:				

Mortality:

Infant mortality: _____ per thousand

% Infant mortality in rural areas: ____ % of total IM

Mortality in children 1-4 years: _____ % per thousand

3 leading causes of death in children under 5 years:

Agricultural Workers:

Total estimated:

% in Modern Agriculture: ___%

% in traditional agricultural sector: ___%

% of total labor force in agriculture: ___%

Average Houshold Size:

Urban: ___

Rural: ___

Unemployment:

Estimated Total: ___%

Urban: __%

2 provinces with highest unemployment:

Estimated annual increase of labor force: ___%

Tribal Affiliation

Tribe	% of Population
	__%
	__%
	__%
	__%

Tribe(s) with highest fertility rate:

Tribe(s) with highest mortality rate:

% of population with access to safe drinking water supply:

Rural: __%

Urban: __%

% of households that have radios: ___%

Relevant Data on SocioEconomic and Political Causes of Malnutrition:

Overall inflation rate last year: ___% (or last available)

Food prices inflation rate last year: ___%

Typical seasonal variations in prices for major staple foods:

Foods	% Increase in Price Pre-harvest/Post-harvest

Calories per U$1 for major staples (at present prices):

Staples	Calories/U$

(Use a food composition table for caloric contents and local food prices for 100 g of each staple.)

Farm gate prices of produce are approximately ____% of retail prices in urban markets. (average)

Minimum Cost Diet (MCD) for an average household of 5:

	Daily Caloric Needs	Daily Protein Needs
Father	3000	47 g
Mother	2200	20 g
Child 1 year	1180	20 g
Child 3 years	1540	25 g
Child 10 years	2600	40 g
Daily family needs	10,540 cals	172 g of protein

Design a menu that provides 10,500 to 11,000 calories and 170 to 200 g of protein at the least cost possible. (For an example see MCD for Monrovia, July 1982, on next page). Use food composition table and survey local food prices in the market. (You may seek help from a local nutritionist or dietician.)

Minimum Wage (urban): $ ____ /month; $ ____ day

(Compare MCD cost with daily wage).

Foreign Trade:

In the last 3 years, are staple food imports: rising? ___ falling? ___ unchanged? ___

Breakdown of food imports (commodities imported last year):

Commodity	Tons	$Value

Fertilizers imports last year: ___Tons = $

Pesticides imports last year: ___Tons = $

% imported fertilizers used in cash crops: (as opposed to food crops) ___%

% imported pesticides used in cash crops: (as opposed to food crops) ___%

Government Finances:

Rate of GNP growth or decline in last 3 yrs.: ___% (positive or negative)

% population with per capita income below $200/yr: ___%

% national income perceived by lowest 20% of population: ___%

MINIMUM COST DIET FOR MONROVIA (JULY, 1982)

MEAL	Cost	AMOUNTS Lbs.	Ozs.	Grams	Calories	PROTEINS: Fruits and Vegetable	Meat and Fish
BREAKFAST:							
1. Orange	$ .20			317	136	3.	
2. Cassava	.32	3.5		1516	1965	16.5	
3. Palm oil	.10		2	66	577		
4. Pepper	.05		1.3	39	12	.24	
5. Salt							
Total Cost Brkf.	$ .67						
LUNCH							
6. Rice	.60	2.01		906	3,298	63.4	
7. Potato							
Greens	.30	1.9		850	418	39.	
9. Bonnies	.25		1.5	49.5	134		23.6
10. Fish	.30	.5		226	231		47.
11. Oil	.20		4	132	1,155	0.0	
12. Onion	.04		2	66	20	0.4	
13. Pepper	.05		1.3	39	12	.24	
14. Salt							
15. Boullion							
Chicken Soup	.05						
Total Cost Lunch	$ 1.79						
SUPPER:							
17. Rice	.30	1.0		453	1,649	31.7	
18. Okra	.25		4	132	47	2.7	
19. Pepper	.05		1.3	39	12	0.24	
20. Palm oil	.10		2	66	577	0.0	
21. Lima Beans	.25	0.5		226	759	48	
22. Salt							
Total Cost Supper:	$ .95				11,000Cals	206G	70g
Total Cost of Meals:	$ 3.41	Daily Requirements				+70 276g	
Minimum cost of food/Month:	$102.30	of Family of five: →10,520Cals+172g of Protein					
		Quantity surpassed by Minimum cost diet: →			480 Cals+104g of Protein		

% earnings from exports used to service foreign debt: ___%

Sectoral distribution of foreign aid (last year; grants + loans):

Agric/Forestry/Fisheries: $ _____ = _____% of total

Education/Training: $ _____ = _____%

Health/Social Welfare: $ _____ = _____%

Rural Development: $ _____ = _____%

Food/Nutrition: $ _____ = _____%

Produce Marketing Board:

If there is one, does Marketing Board trade in any food crops? Yes __ No __

Do farmers get "fair" prices for the agricultural products sold to the Board, making those crops profitable? Yes __ No __

What % of the world market price does the producer of export commodities get?

Commodity

= _____%

= _____%

= _____%

In what projects does the Marketing Board invest its earnings?: (Describe briefly)

% marketing board earnings reinvested in agriculture: __ %

Comments:

Relevant Data on Agricultural Causes of Malnutrition: (Last Year's Data)

Share of all agriculture in GNP: __% total

Modern Sector: __%

Traditional Sector: __%

% of government budget spent on agriculture: __%

Trend of per capita food production in the country in the last years:

increasing? ___ decreasing? ___ unchanged?__

Average annual per capita agricultural production growth rate: ___% (positive or negative)

% of Agricultural land devoted to cash crops: ___%

Distribution of Land Holdings:

Do a relatively small number of landowners control a sizeable proportion of the land? Yes___ No___

% of Rural Households that are landless: ___%

% of Landless agricultural laborers unemployed: ___%

Minimum agricultural wage: $ ___/month

% of land controlled directly or indirectly by large corporations: ___%

List the three crops that receive the highest government priority:

Do non-migrant landless families use home gardens as a food source: Yes___ No___

List the three or four major staple foods in the country

Last year's production figures for the above (in tons):

% of self-sufficiency in staples production of the country: ___%

% staple foods imported (by tonnage): ___%

List the staples imported:

Staples consumed by region:

Region	Staple	% of Households That Grow It	Hungry Season
		___%	from _____ to _____
		___%	from _____ to _____
		___%	from _____ to _____

Staple Consumption Estimates: (for the major staple)

Last year's production: ___tons

Last year's imports: ___tons

Total: ___tons = consumption (roughly)

Estimated last year's population:

Per-capita consumption: kg/year = g/day

Calories per capita per day: cals. (use a simple food composition table)
(This will roughly be 2/3 of total daily caloric intake).

Annual rate of growth of major staple consumption: ___%

Staple Imports

Staple imports represent ___ % of all food imports.

Last year's $ value of staple imports: U$ ____

% of all staple imports that are PL480: ____ % = ____ tons last year

Import duties on imported staples: $ ____/ton

Are the above duty-receipts invested in domestic food production?

Yes ___ No ___ Part ___(___%)

Profits on major staple imports and retail:

Profit of private importer: $ _____/ton

Profit of retailers: $ _____/ton

Local prices of staple in the market (present): ___¢ lb. or ___¢/kg

Retail prices of staple in neighboring countries: (Large differences will encourage smuggling.)

Price	Country
___¢/lb. in	
___¢/lb. in	
___¢lb/in	

Any difference in price in the market between the locally grown and imported staple? Yes ___ No ___

Explain:

Estimated food losses due to storage: ____% of major staple

Price paid to the local producer for his staple: $ _____/ton

Relevant information on production of minor (non-staple) crops last year: (vegetables, fruits, and oils)

Agricultural research: (Relevant information on food crops research)

Agricultural credit and cooperatives in the country: (Relevant information comparing these services for cash as opposed to food crops.)

Rural work/rural small industry programs in the country: (Relevant available information)

Fisheries: (Relevant information on coastal and fresh water fish production and consumption trends)

Livestock:	Cattle	Hogs	Sheep	Goats	Chickens
Last Year's Production (in tons):					
% Households Raising:	___%	___%	___%	___%	___%

Other Relevant Information:

Relevant Data on Health and Environmental Causes:

Last year's health expenditure: $ _____ amounting to $ ____/capita/year.

% of Government (national) budget spent on health: _____%

% of Health Budget that goes to preventive services: _____%, amounting to $ /capita/year.

In the last three years, have health expenditures:

risen? ___ declined? ___ stayed the same? ___

(In real terms, inflation discounted.)

The present health delivery system reaches approximately ___ % of the population.

Is there an explicit primary health care program in the country? Yes ___ No ___

Is it budgeted separately? Yes ___ No ___

If yes, what % of the national health budget does it get? ___ %

Is there a special division of PHC in the MOH? Yes ___ No ___

Are there regional or provincial PHC officers? Yes ___ No ___

Is a special manpower training program in place for primary health care? Yes ___ No ___

If yes, give details and quantify: (Numbers in each category per year)

Is community participation foreseen in primary health care programs? Yes___ No___

If yes, give details:

Is there an explicit nutrition program in the country? Yes ___ No ___

Budgeted separately? Yes ___ No ___

If yes, what % of the health budget?: ___%

Is a nutrition program attached to PHC? Yes ___ No ___

Do PHC workers in the field have minimum materials for growth monitoring and nutrition education? Yes ___ No ___

Give details for each:

Are food/nutrient supplements being distributed anywhere in the country? Yes___ No___

Give details and approximate coverage (urban/rural):

Do separate nutrition rehabilitation centers exist? : Yes ___ No ___

Give details:

What health/nutrition education programs are currently functioning in the country? Give details and approximate coverage (urban/rural):

Distribution of Health Facilities and Personnel in the Country,* (last year)

Province or County	No. of Hospitals G	No. of Hospitals P	No. of Secondary health centers G	No. of Secondary health centers P	No. of PHC Posts/Clinics G	No. of PHC Posts/Clinics P	No. of Physicians G	No. of Physicians P	No. of Community Health Workers	No. of Trained PHC Workers	No. of PHC worker supervisors	% of villages w/PHC Facilities
Total:												

*G = in government service; P = in private service (includes missions)

% of births occurring in hospitals or health settings: ___% (overall)
urban ___% rural ___%

No. of government health personnel by categories:

Categories	Number	% Rural	Type of Training Received

What services does the present PHC system offer?: (list)

Do separate MCH centers exist? Yes ___ No ___

Give details:

Is weight or other anthropometric data routinely collected on children? Yes___ No ___

Give details and approximate coverage (urban/rural):

Does the country have a program for BCG, DPT, polio, tetanus and measles vaccination? Yes ___ No ___

Give details and approximate coverage (urban/rural):

Does the country have a national diarrhea control program?: Yes ___ No ___

Give details and approximate coverage (urban/rural):

Does the country have a national water-borne-disease control program? Yes___ No___

Give details and approximate coverage (urban/rural):

Does the country have a national family planning program in operation? Yes___ No___

Give details and approximate coverage (urban/rural):

Relevant Data on Educational and Cultural Causes:

Literacy Rate: ___% (total)

Male: ___%

Female: ___%

Urban: ___%

Rural: ___%

Does the country have an adult literacy campaign? Yes ___ No _

Enrollment in first grade in primary schools (last year): ___% of eligible children.

Do food beliefs and taboos play an important role in the etiology of malnutrition? Yes__ No__

Other relevant information:

Relevant Data on Administrative, Mangerial and Infrastructural Causes:

Transport

Road network by county or province: (in miles of asphalted roads)

3 counties or provinces with lowest density of roads:

Compare with 3 provinces with lowest population density: (are they the same?)

Marketing of Food

Mostly in hands of women? Yes ___ No ___

Other relevant information available:

APPENDIX B: SAMPLE CARD

CLASSIFICATION: INTERVENTION: PRIORITY:

AG: ECON: HEALTH:
EDUC: OTHER:

A B

(Here, a one- or two-paragraph text describing the intervention is inserted.)

JUSTIFICATION FOR THIS INTERVENTION:

EXPECTED IMPACT ON REDUCING MALNUTRITION: Low - Medium - High/Early-Late

SPECIFIC ACTIONS REQUIRED:

INDICATORS OF PROGRESS:

PERSON RESPONSIBLE:

IMPLEMENTING MINISTRY OR AGENCY:

FINANCING SOURCE:

APPROXIMATE COST: U$

DEADLINE:

TRAINING NEEDS:

APPENDIX C:

Program of Action: (taken from the Liberian document)

Specific interventions in each community will not start until the community formally asks for the program in writing after the project team has briefed and sensitized them in a first visit. The Community is to state that they are willing to commit community resources (human, material and/or financial). The Community will have to organize in order to participate in the discussion of program components and in assigning priorities.

These interventions will be started if non-existent or strengthened and expanded if already in place.

Complementarity of all these areas of intervention cannot be overemphasized, despite the realistic understanding that not all of them may be applicable or feasible, certainly not simultaneously.

Inputs from the community itself should be used as a criterion for the final selection of priorities and the chosen order of implementation of specific project components.

The final package of interventions will vary, therefore, from community to community, but will be based on this master list of ideal components of a Food/Nutrition/PHC project.

I. Policies:

A. Economic:

1. Measures to slow down urban migration, to provide minimum rural infrastructural services and to increase rural employment.
2. Measures to curb urban unemployment.
3. Measures to make rice profitable to its producers.
4. Measures to incorporate women into the development process. Includes provision of credit to market women to involve women (rural) into the money economy.
5. Development of rural markets.
6. Review of pricing policies of the Govt. Produce Marketing Board.
7. Balance in credit allocations between cash crops and food crops.
8. Review of corporate tax structure.
9. Future minimum wage policies to be based on minimum cost diet studies.

B. Agricultural:

1. Strategy to increase the production of rice.
2. Promotion of an agricultural diversification strategy.
3. Extension work to change some agricultural practices.
4. Government subsidies for selected durable inputs for small farmers.
5. Reorientation of agricultural research towards food crops and dissemination of positive findings.

6. Restructuring and expansion of rural cooperatives system.
7. Expansion of small animal production (domestic and commercial).
8. Measures to encourage fish ponds.
9. Feasibility study for canned tomatoes (paste) industry.
10. Subsidization of fertilizers and pesticides. More of these products to go to food crops.

C. Health:

1. Measures to encourage communal farming (traditional).
2. Construction, staffing equipping and opening of more PHC clinics. Training of sufficient paramedical health personnel.
3. Shifting of a higher percentage of the health budget to preventive services, including the expansion of vaccination programs.
4. Expansion of child-spacing and family planning services.
5. Emphasis on diarrhea, parasites and malaria control programs.
6. Expansion of prenatal control services and increase in the number of deliveries properly attended. (training of traditional birth attendants).
7. Latrines program.
8. Access to safe and sufficient drinking water to be increased.

D. Educational:

1. Primary school enrollment to be increased by opening up [redacted] school enrollment,opening more schools, training more teachers and offering more attractive salaries. Schools to offer more work-related skills.
2. Intensification of adult literacy campaign.
3. School feeding program to progressively use locally grown food.

E. Other:

1. Strong drive for community development.
2. Farm to market roads (expansion of network).
3. Measures to stop abuses in rubber prices paid to small farmers.
4. Special regional programs for the prevention and treatment of malnutrition.
5. Creation of a network of daycare centers and nurseries.
6. Reinforcement of County Development Councils to take care of food, nutrition and health problems.
7. Call for a national conference to launch this national plan.

II. Interventions:

A. Economic:

1. Study to decide whether and how to increase rice prices to producers.
2. A rice import policy to be set.
3. Minimum wages of rubber tappers to be increased.
4. The import of baby formulas and baby weaning foods to be controlled.
5. Twice yearly estimations of minimum cost diet for major cities.
6. Import duties on luxury foods and beverages.

B. Agricultural:

1. Logistic support for agricultural extension and community development.
2. Support to home gardening and small irrigation projects.
3. Planning activities at the Ministry of Agriculture to be reorganized.
4. FAO assistance for preparation of a Food Balance Sheet to be requested.
5. Information on post-harvest food losses to be collected and measures to be taken to improve farm level food storage practices.
6. Rice losses in the field to be decreased through fencing and the use of nets against birds.
7. Artisanal fisheries development.

C. Health:

1. Nutrition surveillance and introduction of growth charts for underfives.
2. Retraining of health personnel and home economics/community development workers.
3. Health services in rubber concessions to be strengthened and sanitation conditions in living compounds to be improved.
4. Hygienic handling and preservation of foods in urban markets.
5. A national survey on goiter to be undertaken.
6. Iron fortification of boullion cubes to be studied.
7. Survey to determine incidence of malnutrition in Monrovia.
8. Nutrition protocols to be developed to be used in hospitals and clinics.
9. Nationwide survey on birthweights.

D. Educational:

1. Adult functional literacy and vocational training programs in cities.
2. Preparation of a "Guide to a balanced diet in Liberia."
3. Review and improvement of nutritional curricula of medical, nursing and physicians assistant schools, highschools and primary schools.
4. Nutrition education through radio.
5. Reorganization of school gardening activities. Agricultural curriculum to be added in primary schools.
6. Pre-primary schools to introduce growth charts.
7. Strengthening health education curriculum in primary schools.

E. Other:

1. Stop advertising of baby foods.
2. National conference on the Food and Nutrition Plan.
3. Min. of Planning to finalize analysis of household consumption survey.
4. Feasibility study for progressively implementing daycare centers.
5. Campaign by Min. of Information under the slogans "back to the soil" and "grow more food" to be continued and expanded.
6. ~~Create~~ A Rural Development Task Force to be created attached to the Executive Mansion.
7. A food and nutrition resource library to be created.