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Nutritional Education and Promotion in Central America Through Dietary Guidelines Development

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**NUTRITIONAL EDUCATION AND PROMOTION IN CENTRAL
AMERICA THROUGH DIETARY GUIDELINES
DEVELOPMENT**

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AMHERST, DECEMBER 1994

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TO THE READERS:



**IF YOU ARE LOOKING FOR THE
THEORETICAL BACKGROUND LOOK
AT THE WHITE PAGES**



**IF YOU ARE LOOKING FOR APPLICATIONS
OF THE THEORIES, LOOK AT THE
COLORED PAGES**

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I would like to acknowledge to the following people:

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NUTRITIONAL EDUCATION AND PROMOTION IN CENTRAL AMERICA THROUGH DIETARY GUIDELINES DEVELOPMENT

TABLE OF CONTENTS

I. INTRODUCTION	4
II. PROBLEM STATEMENT	6
A. ABOUT THE PROBLEM	6
B. ABOUT THE INSTITUTION	8
III. FOOD GUIDELINES DEVELOPMENT	10
A. FOOD GUIDELINES IN THE UNITED STATES	10
Nutrition and Your Health: Dietary Guidelines for Americans.	11
B. FOOD GUIDE MODELS IN THE UNITED STATES	12
C. BASIC CRITERIA USED TO DEVELOP UNITED STATES DIETARY GUIDELINES	17
1. Nutrient requirements:	17
2. Food Composition:	18
3. Food Habits:	20
4. Economic and Food Supply Concerns:	20
5. Usability, universality and Flexibility:	21
6. Diet and Health Issues:	22
D. LATIN AMERICAN FOOD GUIDELINES AND FOOD GROUPS	23
1. Bases to Develop Latin American Food Guidelines:	23
2. Venezuelan and Mexican Food Guidelines:	26
3. Food Groups used in Latin America and Other Countries:	28
IV. GUATEMALAN DIETARY GUIDELINES	33
A. BASIC CRITERIA TO DEVELOP DIETARY GUIDELINES	33
1. Target Population:	33
2. Dietary Guidelines Objectives:	34

3. Recommended Dietary Allowances:	34
4. Definition of Food groups:	37
5. Determination of Serving Size:	38
6. Determination of Number of Servings:	39
7. Food Habits:	40
8. Economic and Food Supply Concerns:	41
9. Utility, Universality and Flexibility:	41
10. Health and Diet Issues:	42
 B. FOOD GUIDELINES SUGGESTED	 43
1. Eat a Variety of Foods:	44
2. Improve the Intake of High Quality Protein Foods:	44
3. Consume Foods Rich in Vitamin A:	45
4. Consume Foods Rich in Iron:	45
5. Consume Iodated Salt and Sugar Fortified with Vitamin A:	45
6. Maintain your Fiber Consumption:	46
7. Maintain Healthy Weight:	46
8. Avoid Excessive Intake of Alcoholic Beverages:	47
 D. MESSAGES TO THE TARGET POPULATION	 47
1. Translation of Food Guides into a Common Language and Actions	48
2. Graphic Design:	48
3. Graphic Design Evaluation:	50
 V. STRATEGIES TO IMPLEMENT DIETARY GUIDELINES	 51
A. STRATEGIES TO IMPLEMENT DIETARY GUIDELINES IN THE UNITED STATES	51
1. Recommendations to Public Sector:	52
2. Recommendations to the Private Sector:	54
3. Recommendation to the Education Sector:	55
a. Health-care Professionals Education:	56
b. Community Education:	57
 B. RECOMMENDATIONS TO DEVELOP AND IMPLEMENT CENTRAL AMERICAN DIETARY GUIDELINES	 59

VI. NON-FORMAL EDUCATION IMPLICATIONS OF THE DIETARY GUIDELINES IMPLEMENTATION AT THE LOCAL LEVEL . . . . .	.63
A. IDENTIFY THE TARGET AUDIENCE: . . . . .	.63
B. IDENTIFY THE SOURCES OF INFORMATION WHICH REACH THE TARGET AUDIENCE: . . . . .	.63
C. FIND-OUT THE INFORMATION NEEDED TO ADAPT THE DIETARY GUIDELINES: . . . . .	.64
D. DATA GATHERING TECHNIQUES . . . . .	.65
1. Focus Group Interview. . . . .	.66
2. Chain of Balloons . . . . .	.67
3. Foods Cards . . . . .	.68
4. Family Cards . . . . .	.69
E. ADAPTING THE DIETARY GUIDELINES:. . . . .	.70
VII. CONCLUSIONS . . . . .	.72
VIII. BIBLIOGRAPHY . . . . .	.73
IX. ANNEX	

NUTRITIONAL EDUCATION AND PROMOTION IN CENTRAL AMERICA THROUGH DIETARY GUIDELINES DEVELOPMENT

I. INTRODUCTION

Malnutrition has been one of the major health problems which affects two of every ten children, under five years old, in Central American countries. During recent years, in addition to malnutrition problems, almost all Central American countries have reported an increase in the incidence of chronic illness such as diabetes, cardio-vascular diseases and some cancers. This tendency has been associated with the increase of overweight and obesity among the adult population, especially among women. Both poor nutrition and overnutrition constitute high priority health problems, which need to be addressed through comprehensive health promotion programs that includes a strong component of nutrition education.

The strategies and actions to promote appropriate diets and healthy lifestyles, that emanated from the last International Conference on Nutrition (FAO 1992), include:

- * nutrition education and dietary guidance for the general public
- * training of professionals in health care, agriculture extension and related services
- * development of food-services guidelines
- * involvement of consumer groups and the food industry
- * ensuring food quality and safety
- * monitoring and evaluating national food and nutrition situations
- * encouraging the availability of the variety of foods needed to meet consumer demand.

To accomplish these recommendations many sectors needs to take an active role in the promotion of healthy habits. The public sector, including health professionals, can work educate the general public about diet and health. the food industry plays an essential role by responding to consumer demand to produce and market the variety of foods needed for a healthy diet. Both, the formal and non-formal education system must play a central role, incorporating nutrition into education in general, and within the context of local culture. In addition to school systems, the health and agriculture sector, public information channels, unions, youth groups and community

leaders should take an active role in education and promotion of nutrition healthy lifestyles (FAO 1992).

I believe that the first step, to carry out such a comprehensive nutrition promotion strategy should be the development of dietary guidelines, as the basis of information that every sector should use as they develop their own educational programs, directed to different populations, applying different educational strategies.

The purpose of this document is to present a model of dietary guidelines and graphic design to promote health and nutrition in Central American countries, as well as a proposal to implement this dietary guidelines. To develop the model of dietary guidelines, experiences from different countries such as United States, Mexico and Venezuela were reviewed and adapted. Graphic designs from fourteen countries was reviewed.

The content of this document is presented in four sections: The first one presents a bibliographic review of dietary guidelines development in the United States and in Latin American countries. The second one, demonstrates the adaptation and application of these concepts to the development of the Guatemalan dietary guidelines and graphic design. The third section introduces a bibliographic review of the recommendations to implement dietary guidelines in the United States, as well as my suggestion to develop and implement dietary guidelines in Central American countries. In the last section I present some ideas about the application of non-formal education strategies, to adapt the dietary guidelines at community level.

This document will be translated into Spanish, and will be reviewed by a team of nutritionists, communicators and educators from the Institute of Nutrition of Central America and Panama. After that, this document will be disseminated to other Latin American countries and could be used as the basis to develop dietary guidelines in Latin American countries.

II. PROBLEM STATEMENT

This chapter offer an overview of the nutritional problems in Central American countries, related both malnutrition and overnutrition. Also includes a brief description of the food guidelines used in Central America, to promote good food habits among the population, and the reasons for the necessity to develop new dietary guidelines. This section ends with a short description about the Institute of Nutrition of Central America and Panama, as the institution which will promote the dietary guidelines development in Central American countries. The purpose of this chapter is to give basic information about the context in which this proposal will be developed and implemented.

A. ABOUT THE PROBLEM

There are enough scientific information that supports the relationships between food intake diseases and nutritional status of individuals and populations. It's known that limitations in food quantity interact with disease episodes to affect the biological utilization of foods and become risk factors of protein-energy malnutrition and micronutrient malnutrition in large proportion of the world's population.

The crisis in food availability has been increased in Central American countries by socio-economic and political conditions. This increases the malnutrition problems in the region with the most common nutritional deficiencies found in these countries being: Protein-energy, iodine, vitamin A and iron deficiency. The clinical manifestation of the deficiency of these nutrients are, among others: Weight and height retardation, goiter, cretinism, blindness and anemia. These and other biochemical indicators are used to estimate the magnitude and tendency of nutrition problems (Delgado 1993, INCAP 1992).

The latest data on Central American nutrition status show that 21.6% (797,000) children under five years have malnutrition with evidence that in some specific regions this problem has been increased as a result of food insecurity among the population. The effect of the economic crisis at home level is a decrease of the family income and food access, making it very important

to teach the population how to choose better quality foods with their restricted economic resources (Delgado 1993).

On the other hand, during recent years, almost all Central American countries have reported an increase in the incidence of chronic illness such as diabetes, cardio-vascular diseases and some cancers. This tendency has been associated with the increase of overweight and obesity among adult population, especially among women. In marginalized urban populations there have been found malnutrition problems by deficiency, as well by excess, in the same population, even within the same family. It is easy to find overweight parents with malnourished children. This situation has been described as "**Epidemiological nutrition polarization**". Both, poor nutrition and overnutrition constitute high priority health problems, which need to be addressed through comprehensive health promotion programs that includes a strong component of nutrition education (INCAP 1992, Delgado 1993).

During the last 30 years, Central American nutrition advisors have used the concept of the Basic Three Groups of food to teach populations how to select a balanced diet. This concept was adapted from the USA Basic Four, and introduced in Central America by the Institute of Nutrition of Central America and Panama -INCAP- during the early years of the 1960's. The use of the Basic Three Groups of Food was useful but rigid and only allowed people to know what kind of food to choose but not how much. The Basic Three Group of Foods is a concept of food classification by the nutrients they provide. For Central American countries, the three groups are:

- * Animal provided foods
- * Vegetables and fruits
- * Grain, Cereals and Legumes.

The message given to the population was "Eat one food of each group in each meal". But people with low income could not buy foods from the first group (milk, meat, cheese, etc) which are very expensive. The following paragraphs present an evaluation of the Three Basic Group concept, using different criteria:

- * Nutrition requirement: Are not specified. The recommendation was made in terms of eat one food of each group in each meal; it means that all food groups had the same recommended portions. If people have three meals per day it means that they will eat three

portions of each group daily. Is it enough to meet their dietary allowances?

- * Food Composition: Food groups are positively identified, but size portions are not defined.

- * Food Habits: Are clearly identified in this guide; food groups include local foods with local names.

- * Economic and Food Supply Concerns: This is one of the major problems in Central American countries: economic constraints and food supply, and the guide doesn't meet this criteria. This guide lost significance recommending individuals to eat food that they cannot obtain, such as: milk, eggs, and meat.

- * Usability, Universality and Flexibility: In terms of universality the guide is applicable to healthy population and in terms of flexibility allows consumers to eat according to their cultural patterns. Usability is questionable because it recommend foods out of reach to the population.

- * Diet and Health issues are not specified in this guide.

This concept became obsolete and beyond the realities of Central American Countries. That's why during the last few years the nutritionists of all Central American countries have felt the necessity of finding another more flexible way to advice people about quality and quantity of food to eat, to get the nutrients they need to be healthy

The dietary guidelines developed by different countries, such as United States, Mexico and Venezuela, shown models that fits well in Central American context. For these reason, INCAP wants to review experiences from different countries, to develop a proposal which can be used as a model, to develop dietary guidelines and graphic design, for the Central American population. This proposal should be supported by the Institute of Nutrition of Central America and Panama. The following section present basic information regarding INCAP.

B. ABOUT THE INSTITUTION

The Institute of Nutrition of Central America and Panama -INCAP- is a Central American integration organization with 45 years of leadership and technical scientific excellency. It has

applied knowledge, technologies and resources than can contribute to the solution of the food and nutrition problems of populations of Central American Countries: Belize, Costa Rica, El Salvador, Honduras, Guatemala, and Panama. To accomplish its purpose INCAP develops activities through its four basic functions:

- * Training and development of human resources
- * Technical cooperation
- * Research
- * Scientific and technical information and communication.

At present INCAP is developing its basic functions through eight priority programs:

1. Human Resources Development
2. Human Nutrition
3. Nutrition-Infection
4. Micronutrient Deficiency
5. Food Socioeconomical Policies
6. Food Technology
7. Food Protection and Consumer Orientation
8. Food Security at Community Level

In 1989, with the purpose of increasing the Institute's response and support capacity to the Central American countries and with the aim to promote a decentralization process, **Basic Technical Groups -GTB's-** (for it's Spanish name) have been formed in each country, thus enabling the decentralization of the technical cooperation actions. The GTB's are integrated by INCAP's advisors, with different specializations (i.e. maternal-infant nutrition, food nutrition education, food technology) and they provide the technical cooperation requested by countries to support national food and nutrition programs.(INCAP 1992).

As a leader in the nutrition area, INCAP has an interest to generate the theoretical framework needed to develop the Central American Dietary Guidelines and define the strategies to introduce it to the Central American community as a tool to help people learn how to better feed themselves with the food available in their countries.

III. FOOD GUIDELINES DEVELOPMENT

This chapter presents a bibliographic review of the experience of dietary guidelines development in different countries. Starting with an extensive review of the United States' experience in develop dietary guidelines and food models; including the criteria used to develop the last USA dietary guidelines. Followed by a review of the bases to develop Latin American dietary guidelines and the Mexico and Venezuela's experiences. And finishing with a review of foods models used in 14 different countries. The purpose of this chapter is to set the theoretical framework to develop the Central American dietary guidelines.

A. FOOD GUIDELINES IN THE UNITED STATES

A food guide is an instrument which converts the professional scientific knowledge of food composition, nutrient requirements, and their relationships with health into a practical tool for food selection to be used by individuals without training in nutrition.

In the United States, the developing of dietary guidelines began a century ago with Atwater's work in the field of nutrition. Since this first effort, dietary guidelines have been improved according to new knowledge and understanding of food composition, relations between food intake and health, and food habits. On the other hand, dietary guidelines have been adapted according to the influence of socio-economic factors such as food supply, economic restrictions and wars. Table No 1 summarizes the principal USDA food guides from 1916 to 1992.

Given the relevance of the last food guidelines for the purposes of this work, a brief description of the USDA Dietary Guidelines for Americans is presented in the following paragraphs.

Table 1. Principal USDA Food Guides Through the Years (1916-1992)

(All food guide recommendations are for daily servings (svg), except where otherwise indicated)

FOOD GUIDE	NO. OF FOOD GROUPS	PROTEIN-RICH FOODS				BREADS	VEGETABLES				FRUIT		OTHER	
		MILK		MEAT							FATS	SUGARS		
1916 Caroline Hunt ^a buying guides	5	MEATS AND OTHER PROTEIN-RICH FOOD 10% cal milk, 10% cal other 1 c milk + 2-3 svgs other (based on 3 oz svg)				CEREALS AND OTHER STARCHY FOODS 20% cal 9 (based on 1 oz or 3/4 c dry cereal svg)	VEGETABLES AND FRUIT 30% cal 5 (based on average 8 oz svg)				FATTY FOODS 20% cal 9 (based on 1 Tbsp svg)	SUGARS 10% cal 10 (based on 1 Tbsp svg)		
1930's H. K. Stiebeling ^b buying guide	12	MILK 2 c	LEAN MEAT, POULTRY FISH 9-10/wk	DRY MATURE BEANS, PEAS, AND NUTS 1/wk	EGGS 1	FLOURS, CEREALS As desired	LEAFY GREEN YELLOW 11-12/wk	POTATOES SWEET POTATOES 1	OTHER VEGETABLES & FRUIT 3	TOMATOES & CITRUS 1	BUTTER -	OTHER FATS -	SUGARS --	
1940's Basic Seven ^c foundation diet	7	MILK AND MILK PRODUCTS 2 c or more		MEAT, POULTRY, FISH, EGGS, DRIED BEANS, PEAS, NUTS 1-2		BREAD, FLOUR, AND CEREALS every day	LEAFY GREEN YELLOW 1 or more	POTATOES & OTHER FRUIT & VEGETABLES 2 or more	CITRUS, TOMATO, CABBAGE SALAD GREENS 1 or more	BUTTER-FORTIFIED MARGARINE some daily				
1956-70's Basic Four ^d foundation diet	4	MILK GROUP 2 c or more		MEAT GROUP 2 or more (2-3 oz svg)		BREAD, CEREAL 4 or more (1 oz dry, 1 slice, 1/2-3/4 c cooked)	VEGETABLE-FRUIT GROUP 4 or more (incl. dark green/yellow vegetables frequently and citrus daily 1/2 c or average size piece)							
1979 Hassle-Free ^e foundation diet	5	MILK-CHEESE GROUP 2 (1 c, 1-1/2 oz cheese)		MEAT, POULTRY, FISH AND BEANS GROUP 2 (2-3 oz svg)		BREAD-CEREAL GROUP 4 (1 oz dry, 1 slice, 1/2-3/4 c cooked)	VEGETABLE-FRUIT GROUP 4 (incl Vitamin C source daily and dark-green/yellow vegetable frequently 1/2 c or typical portion)				FATS, SWEETS, ALCOHOL GROUP use dependent on calorie needs			
1984+ Food Guide Pyramid ^f total diet	6	MILK, YOGURT, CHEESE 2-3 (1 c, 1-1/2 oz cheese)		MEAT, POULTRY, FISH, EGGS, DRY BEANS, NUTS 2-3 (5-7 oz total/day)		BREADS, CEREALS, RICE, PASTA 6-11 • whole grain • enriched (1 slice, 1/2 c cooked)	VEGETABLE 3-5 • dark green/deep yellow • starchy/legumes • other (1 c raw, 1/2 c cooked)			FRUIT 2-4 • citrus • other (1/2 c or average)		FATS, OILS, SWEETS, total fat not to exceed 30% cal sweets vary according to caloric need		

a. "Food for Young Children" (1916), "How to Select Foods" (1917), "A Week's Food for an Average Family" (1921), "Good Proportions in the Diet" (1923)

b. "Planning for Good Nutrition" (1939) (published two previous food plans, 1933/36)

c. "National Wartime Nutrition Guide" (1943), "National Food Guide" (1946)

d. "Essentials of An Adequate Diet" (1956), "Food for Fitness--A Daily Food Guide" (1958)

e. Food: "The Hassle-Free Guide to a Better Diet" (1979)

f. "Developing the Food Guidance System for 'Better Eating for Better Health'" (1985)

Source: U.S. Department of Agriculture. USDA's food guide. Background and development. USDA, Human Nutrition Information Service. Miscellaneous Publication # 1514, 1993.

Nutrition and Your Health: Dietary Guidelines for Americans:

In 1980, the United States Department of Agriculture (USDA) and Department of Health and Human Services(DHSS) issued the first edition of Nutrition and your Health: Dietary Guidelines for Americans, as a set of seven simple guidelines emphasizing the need to consume a variety of foods, maintenance of recommended body weight and moderation of the intake of foods related to chronic disease risk factors. The dietary guidelines were directed to healthy American and individuals at risk of chronic diseases, not to individuals with special diets for medical reasons . These non-quantitative guidelines provoked considerable discussion among nutrition scientists, consumers groups, commodity groups, the food industry and others. To disseminate these new guidelines among the population the Federal Government, through its Human Nutrition Information Service, published and distributed different educational materials as leaflets, brochures, booklets and a set of newsletters directed to Extension Agents and the general public (Peterkin 1985, Cronin, et. al. 1987, USDA 1981, USDA 1990[a],USDA 1993).

In 1983, a Dietary Guidelines Advisory Committee , of nine nutrition scientists was formed to review and make recommendations to USDA and DHSS about the guidelines. The committee's recommendations were reviewed and published in 1985 as the Second Edition of the Dietary Guidelines. this second edition was more widely accepted and used by scientific, consumer, commodity and industry groups. As with the previous edition, these dietary guidelines were designed for healthy Americans who want to avoid nutritional deficiencies and reduce risks of certain chronic diseases. Because these guidelines refer to a total diet, they do not recommend eliminating any food or group of foods from the diet. As the previous guide, this one did not recommend specific amounts of any nutrient; however it did suggest that the population should choose diets reduced in calories (primarily from fats, sugars and alcohol) and increased in dietary starch and fiber. These guidelines had been used for United States Department of Agriculture (USDA) and Department of Department of Health and Human Services (DHHS) as basis of their nutrition education, and information programs. Using the same strategy to disseminate the second edition of the Dietary Guidelines, a variety of publications were released. One of the most

important was the set of 14 newsletters for Extension Agents (Peterkin 1985, USDA 1985, USDA 1990[a], USDA 1993).

In 1990, the Committee reviewed and reissued the Dietary Guidelines incorporating findings of two major scientific reviews: the Surgeon's General Report on Nutrition and Health (Published in 1988 by DHHS) and Diet and Health: Implications for Reducing Chronic Disease Risk, (published by National Research Council of the National Academy of Sciences). The major emphasis of this third edition was on guidance on body weight and intake of fat and saturated fat.

Other sources of information used to develop the educational material regarding the new food guide were the study about penetration and uses of the second edition of the Dietary Guidelines, developed by the University of Wisconsin, and the study about the evaluation of the newsletter directed to Extension Agents, by the users, developed by Pennsylvania State University. This feedback allowed the development of a wide variety of educational material, such as: newsletters, brochures, leaflets and other materials. One of the most important products of the third edition was the creation of a new food guide model: **The Food Guide Pyramid**. Special emphasis will be given to this food guide pyramid in the next section of this document (Peterkin 1985, USDA 1990[a], USDA 1993, Peterkin 1991, Steele 1990, USDA 1992[b], USDA 1990[b], Block 1991, Hundall & Wellman 1992, Egg Nutrition Center 1990).

The basic criteria used to develop the three editions of the dietary guidelines were: faithfulness to the scientific base, utility to the general public, and consistency with federal agencies' policy. Table No 2 shows the differences among the three guidelines:

B. FOOD GUIDE MODELS IN THE UNITED STATES

Since 1956, with the release of the Basic Four, Americans have learned about balanced diets using a wheel that split food into four equally important groups. This chart was used in the

USA and many other countries for decades. Since 1981, nutritionists began to shown concern about the usability of this chart, and publications regarding new food guides appeared. For example, Dodds (1981) proposed "The Handy Five Food Guide" using the fingers of a hand to represent five food groups. Pennington (1981) suggested an inverted pyramid divided in four levels, and each level sub-divided into 2 to 5 segments. Lachance (1981) proposed the use of the same wheel but not equally divided, using different sizes for each group, according to the number of servings recommended.

TABLE No 2
DIETARY GUIDELINES: FIRST, SECOND AND THIRD EDITION

1980	1985	1990
Eat a variety of foods	Same	Same
Maintain ideal weight	Maintain desirable weight	Maintain healthy weight
Avoid too much fat, saturated fat and cholesterol	Avoid too much fat, saturated fat and cholesterol	Choose a diet low in fat, saturated fat and cholesterol
Eat food with adequate starch and fiber	Eat food with adequate starch and fiber	Choose a diet with plenty of vegetables, fruits and grains
Avoid too much sugar	Avoid too much sugar	Use sugars only in moderation
Avoid too much sodium	Avoid too much sodium	Use salt and sodium only in moderation
If you drink alcohol, do so in moderation	If you drink alcohol beverages do so in moderation	Same

The American Red Cross Nutrition Course was the first which presented the new dietary guidelines to consumers, in 1984; however it used the same model of the wheel, named "Food Wheel". The Pennsylvania State University survey, in which households reviewed nutrition print material, indicated that the Food Wheel was perceived as outdated and repetitive of the "Basic Four" that they learned at school (USDA 1993). Participants dismissed the circle shape as old without really looking at it; they didn't notice that the chart contained new guidance regarding to moderation in fat and sugar intake.

This information suggested that, to disseminate the new dietary guidelines, a new graphic

design must be developed, which should be attractive, understandable, and memorable, as well as be able to give the key messages of variety, proportion and moderation, with the following criteria:

- * Variety: the graphic must present six categories of food
- * Proportionality: The graphic must present the relative amounts of the various food groups to eat daily and the range in the number of servings to eat within food groups
- * Moderation: The graphic must indicate moderation of fat and added sugars in the total diet. Foods in the fats, oils and sweets group should be identified as concentrated sources of fat and/or added sugars, but other food group sources should be identified as well (USDA 1993).

In 1988, USDA contracted with Porter & Novelli, a market research firm, to have developed a new graphic design to help communicate the principle messages of the Dietary Guidelines for Americans. That effort led to the development of a set of five different graphics: Circle, Blocks in a row, Blocks in a circle, Inverted pyramid and Pyramid (See Figure 1). These graphics were tested using focus groups and as a result all the first four models were rejected and the pyramid which appeared to work well was improved (USDA 1993, USDA 1992[d]).

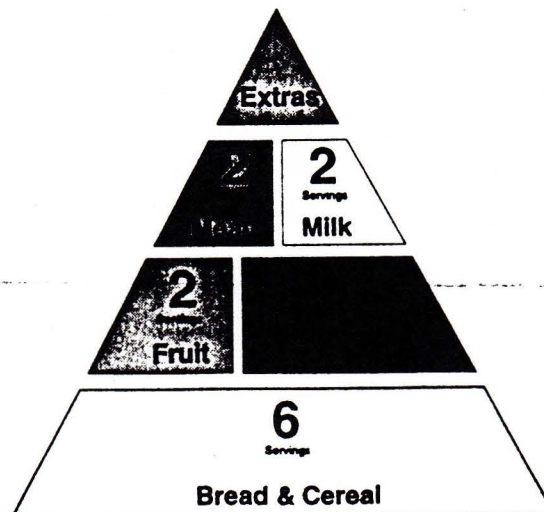
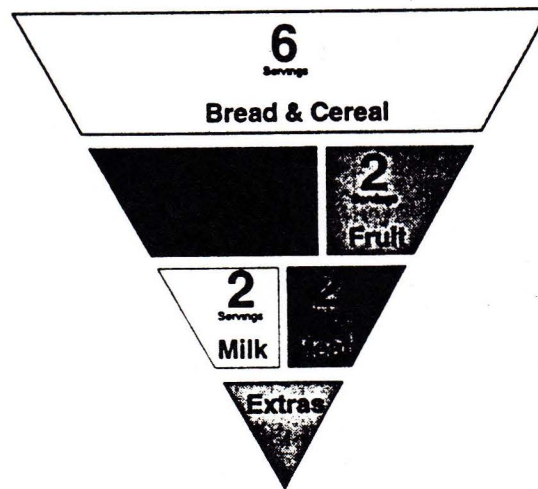
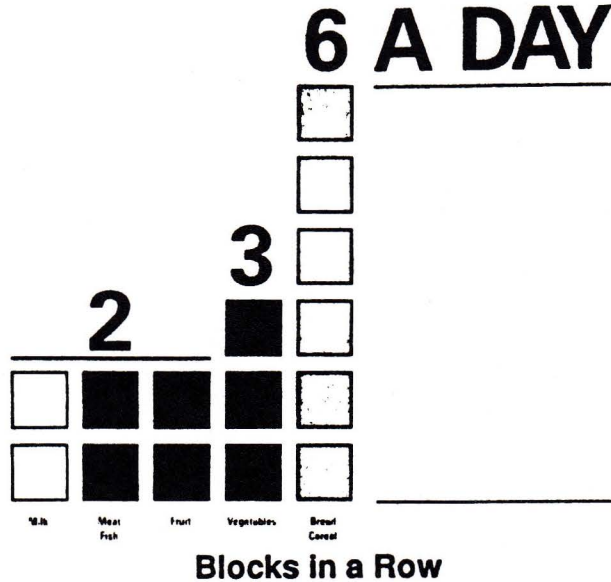
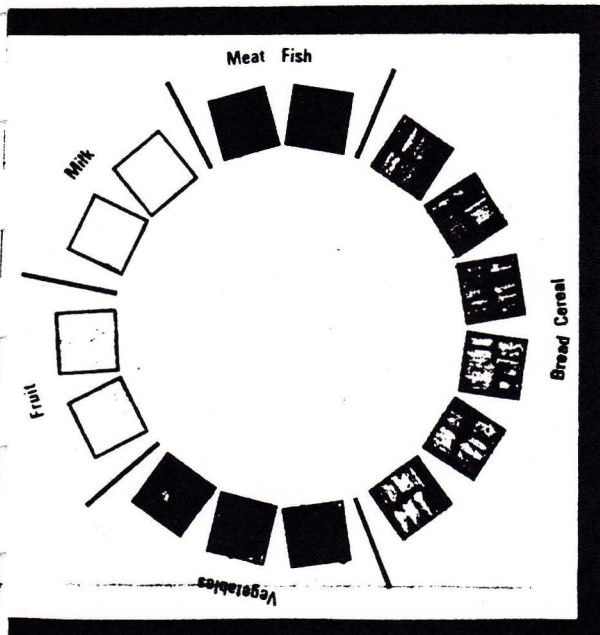
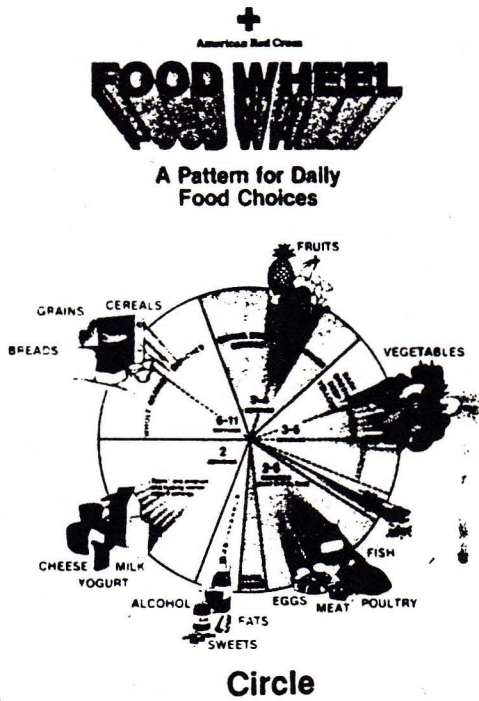
Different models of "The Eating Right Pyramid" were developed and tested in two phases with the traditional nutrition audience: middle class adults with a high school education with an interest in nutrition and at least some responsibility for meal planning and preparation (USDA 1992[d]).

The new graphic was ready to be released in April 1991 when the Secretary of Agriculture asked that further testing be conducted in a wider range of audiences, especially children and low income, low literacy adults (USDA 1993, USDA 1992[d], Pyramid power 1991).

As a result, in July 1991, Bell Associates, Inc. (BAI), of Cambridge Massachusetts, was retained by USDA, in collaboration with the Department of Health and Human Services (DHSS), to conduct an evaluation of Dietary Guidance Graphic Alternatives. The project included development and field testing of a series of graphic illustrations which, when used in combination

FIG. No. 1

Graphic Designs Tested in Exploratory Focus Groups



with other materials, would carry key messages of the Dietary Guidelines for Americans. To generate this graphic, two groups were formed to give technical assistance and recommendations to the contractor: the first group was an advisory panel (formed by professionals in the fields of nutrition education, cognitive psychology, education, market research, communication research, evaluation design, and statistics). And the second group was an Internal Technical Working Group from USDA and DHSS (USDA 1992[d], USDA 1993, Bell 1992[a],[b]).

The work was divided into two broad phases: Qualitative research and Quantitative research:

Qualitative research: During this phase BAI and USDA staff reviewed numerous alternative graphic models, including those that had been used in previous testing and others that had been developed by the USDA. They also reviewed more than 400 graphics that had been sent to USDA by the newspaper USA TODAY, which had solicited readers' suggestions for revising the Eating Right Pyramid. This process resulted in the development of five sets of graphics which were tested with different audiences. The method was to develop the set of graphics, test them, and develop a new set to be tested, as follows:

- * First set: Tested by the advisory panel
- * Second set: tested by three pilot focus group
- * Third set : tested by 13 focus group including groups of children, low income adults, food industry and consumer advocacy organizations
- * Fourth set: tested by 13 groups, including a group of school teachers, and 42 one-on-one interviews. These final sessions were the basis for the Fifth set of graphics that were employed in the quantitative testing interviews.

Quantitative research: In this phase a total of 3017 individuals were interviewed. The respondents included larger portion of low income families and ethnic minorities. All graphics were produced in English as well in Spanish.

The evaluation of Dietary Guidance Graphic Alternatives has identified two graphic

designs which, in a single exposure, convey considerable information about the selection of a diet in agreement with current recommendations for health promotion. The two graphics were The Pyramid and the Bowl (See Figure No.2) (USDA 1993, USDA 1992[d], Bell 1992[a],[b]).

The results of this evaluation could be summarized as follows:

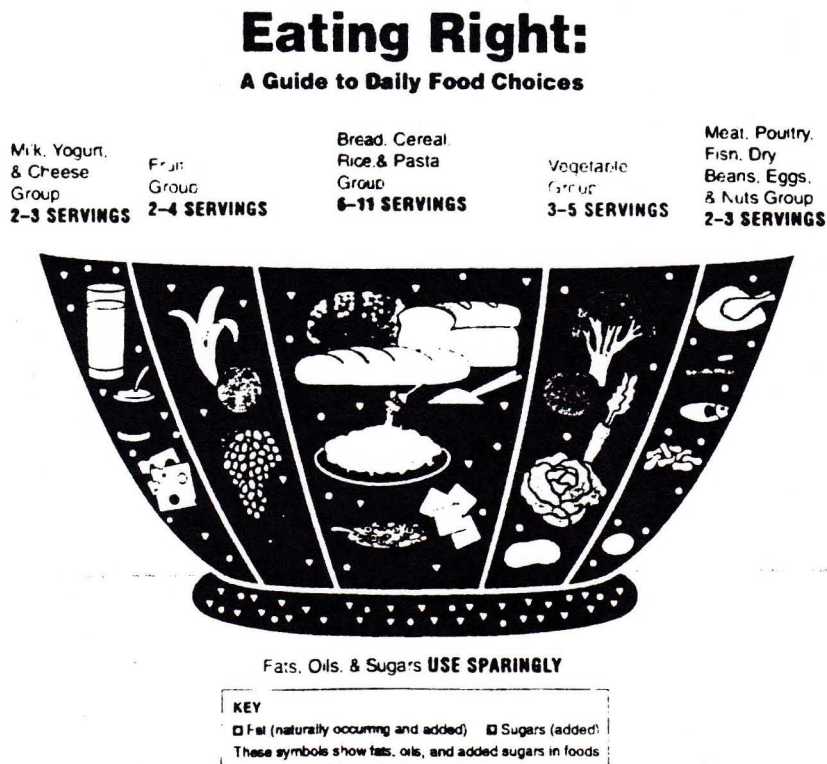
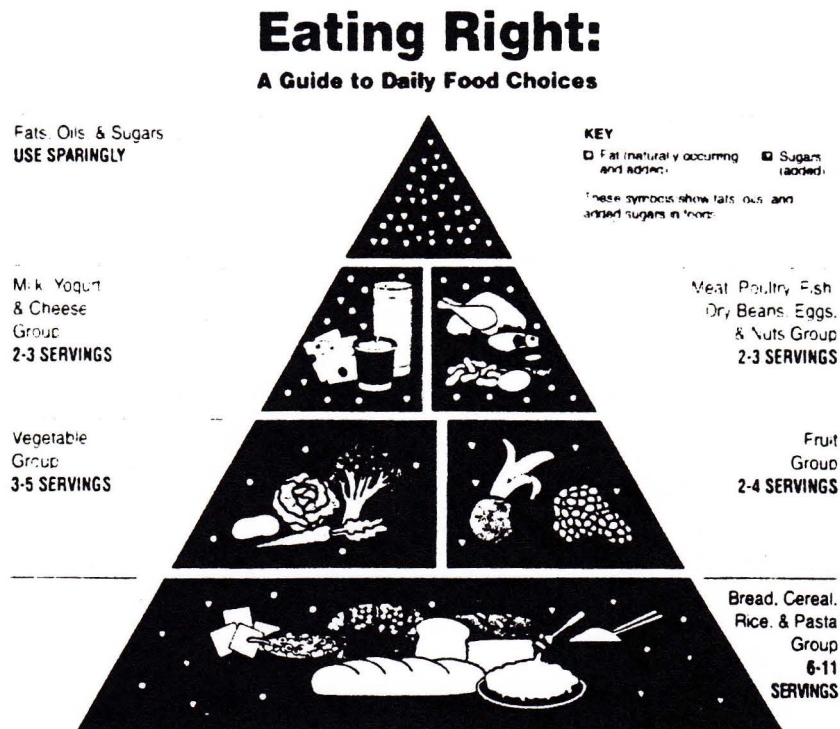
"The pyramid graphic was found to be most effective in conveying the messages of moderation and proportionality. The pyramid design might be further strengthened in conveying the total moderation message by including both food, oil and sweet (FOS) pictures and symbols in the same graphic. The pyramid also has considerable strength in promoting the message of variety, proportionality and moderation, nor about the importance of consuming foods in adequate amounts from all the major groups to achieve a healthful diet" (Bell 1992[a]).

"The bowl design was found to be far less effective in promoting the moderation and proportionality messages, but did illustrate the variety message somewhat better than the pyramid. Although respondents indicated a preference for the bowl shape, it is important to note that even in the groups where preference for the bowl was strongest (i.e. younger, less educated, ethnic minority and low income respondents), the pyramid was more likely to be identified as the graphic which suggested the moderation-of-fat message most clearly. Further, preference for the bowl was not linked to effectiveness of intended messages in those groups. In this study, the shape a respondent preferred was of less importance to policy development than the amount of intended information conveyed by each graphic" (Bell 1992[a]).

The new Food Guide Pyramid was released by The Secretary of Agriculture on April 28, 1992. Two brochures were released to give information to the consumers: The Food Guide Pyramid and Beyond the Basic Four. The graphic has been included in several USDA publications; posters, short videos and slides have been developed. Several public and private institutions have included the pyramid as part of their nutritional advisory; and the American Medical Association will replace the old Four Food Groups with the Pyramid in future textbook editions. As an example, a leaflet with the explanation of the pyramid is included in this document. (See figure No.3)

In 1994, an alternative pyramid was presented by Harvard School of Public Health,

Figure 2 Example Graphic Shapes Tested in Quantitative Phase



Food Guide Pyramid

A Guide to Daily Food Choices

Fats, Oils, & Sweets
EAT SPARINGLY

KEY

◻ Fat (naturally occurring and added)

◻ Sugars (added)

These symbols show that fat and added sugars come mostly from fats, oils, and sweets, but can be part of or added to foods from the other food groups as well.

Milk, Yogurt, & Cheese Group
2-3 SERVINGS

Meat, Poultry, Fish, Dry Beans, Eggs, & Nuts Group
2-3 SERVINGS

Vegetable Group
3-5 SERVINGS

Fruit Group
2-4 SERVINGS

Bread, Cereal, Rice, & Pasta Group
6-11 SERVINGS

SOURCE: U.S. Department of Agriculture/U.S. Department of Health and Human Services

Use the Food Guide Pyramid to help you eat better every day. . .the Dietary Guidelines way. Start with plenty of Breads, Cereals, Rice, and Pasta; Vegetables; and Fruits. Add two to three servings from the Milk group and two to three servings from the Meat group.

Each of these food groups provides some, but not all, of the nutrients you need. No one food group is more important than another — for good health you need them all. Go easy on fats, oils, and sweets, the foods in the small tip of the Pyramid.

To order a copy of "The Food Guide Pyramid" booklet, send a \$1.00 check or money order made out to the Superintendent of Documents to: Consumer Information Center, Department 159-Y, Pueblo, Colorado 81009.

U.S. Department of Agriculture, Human Nutrition Information Service, August 1992, Leaflet No. 572

Oldways Preservation & Exchange Trust, and the World Health Organization. This new pyramid is named "The Mediterranean Diet Pyramid", it is based on the dietary habits of population from Greek, Italy and Crete. The basic difference of the Mediterranean Diet Pyramid and the USDA Pyramid, is the recommendation to use olive oil as source of fat, and approves to drink wine with dinner. These modifications were introduced because of the historically low incidence of chronic diseases in Mediterranean countries. The inclusion of a recommendation of drinking alcohol has generated high controversy among scientists around the world, because of the problems associated to alcoholism.

C. BASIC CRITERIA USED TO DEVELOP UNITED STATES DIETARY GUIDELINES

Through history to develop dietary guidelines the different groups have used different criteria. In some cases the criteria were established, and in others they weren't. This bibliographic review has shown that the most common criteria used were:

- * Nutrient requirements
- * Food composition
- * Food habits
- * Economics and food supply concerns
- * Usability, universality and flexibility
- * Diet and health issues

(USDA 1993, Cronin, et. al. 1987, Newman & Lee 1991, Gillespie 1987, Haughton, et. al. 1987, Dodds 1981, Light 1981).

1. Nutrient requirements:

The new knowledge on nutrition is reflected in all the guides. At the beginning emphasis was given to energetic foods; gradually attention was shifted to different nutrients that were likely

to be deficient in diets, and gradually to actually focus on nutrient excess. Since the first publication of the Recommended Dietary Allowances, in 1941, RDA's became the source of information for establishment of nutritional goals, expressing nutrition guidelines in terms of nutrients rather than in foods. RDA's soon become a tool to assess the nutritional adequacy of food guides (USDA 1993, Cronin, et al. 1987, Haughton, et. al. 1987, Food and Nutrition Board 1986). Nutritional goals give the blueprint to develop food guides. As an example, table No. 3 shows the nutritional goals for the 1990 food guide, developed by USDA:

Another issue of major relevance is the establishment of the guide in terms of **foundation diets** vs. **total diets**. In the first case, guides recommended the minimum number of servings and were not intended to cover full energy and nutrient needs. These guides assumed that in order to meet their requirements individuals would consume additional servings of food groups, and from fat and sugar used in cooking or added at the table. The USDA guides since "The Basic 4" were based on foundation diets. In the case of total diets, guides must take into account the adequate intake of vitamins, minerals and protein and the avoidance of excessive intake of other food components that have been linked to chronic diseases. Food guides from 1984 to date are based on total diet (USDA 1993, Haughton, et. al. 1987, Cronin, et. al. 1987).

2. Food Composition:

In order to translate nutritional needs into foods, it is necessary to start with food composition tables to determine quantity, quality and frequency of food consumption needed to meet RDA's. Food composition allows categorization of foods in groups and subgroups. Over the years guides have classified foods in a range of four to ten groups. The criteria to create a food group is related to highlight nutrients and food components of concern (USDA 1993). However, professionals should consider as well, consumers' food classification system and the criteria on which consumers group foods to facilitate the understanding and remembrance of the foods groups (Axelson, et. al. 1986).

TABLE No 3
NUTRITIONAL GOALS FOR THE 1990 FOOD GUIDE

NUTRIENT/FOOD COMPONENT	GOALS
A. NUTRITION ADEQUACY food energy protein vitamins (A, C, E, thiamin, riboflavin, niacin, B-6, B-12, folate) minerals (Ca, Fe, Mg, P, Zn, Cu) fiber	1,300 to 3,000 calories 100% RDA sex/age groups > 2 years of age 100% RDA sex/age groups > 2 years of age 100% RDA sex/age groups > 2 years of age Increase consumption
B. MODERATION fat total saturated fatty acids cholesterol sodium added sugars	30% or less of calories <10% of calories 300 mg or less 2,400 mg or less To balance calories, but not to exceed current consumption

Source: U.S. Department of Agriculture, Human Nutrition Information Service. 1993. USDA's Food Guide. Background and Development. Miscellaneous Publication No. 1514.

Once the criteria to include foods in a food group has been established, the next step is to determinate serving sizes to meet the criteria. To develop serving sizes of the most recent food guides, USDA considered the following four factors:

- * Typical serving sizes used by the population reported by food consumption surveys
 - * Easy use sizes using household units rather than grams because households units are easier to remember and are used by the consumers
 - * Nutrient content giving alternatives with similar nutrient content
 - * Traditional serving size used in other guides, to make them easy to remember
- (USDA 1993)

The last step is to determine the number of servings to assure the consumption of enough quantity and variety of food to meet the nutritional goals. Number of servings could be

calculated on different bases: concerns about nutrient adequacy, or concerns about moderation (USDA 1993, Richards-Deleew 1992).

3. Food Habits:

Another criterion used to develop food guides is the knowledge of food consumption among the population. Since development of the first guides, food habits have been taken into account. In the development of the Basic Four guide the concern on taste, habits and culture was evident. Haughton and colleagues, (1987), said that if the food guide is based on familiar dietary patterns it will be easily accepted. For example, to develop the actual food guides, information from three national food consumption surveys was reviewed: USDA/HNIS' 77-78, USDA/HNIS' 85 and USDA/HNIS' 87-88 (USDA 1993). The survey results provided data on adequacy of diet, nutrients low consumed and overconsumed, as well as other information such as the kind of food people consume, frequency, serving size, common names given to foods, intrafamily distribution of foods, and changes in dietary habits.

4. Economic and Food Supply Concerns:

Economic and food supply concerns were evident throughout different guides. World War I called attention to the importance of the improvement of American agriculture and food preservation. One of the first effects of war was the limitation of the availability of some foods. Guides developed during the depression years or during the World War II included recommendations regarding to cost comparison of various foods within each group and selection of those foods which were most economical in terms of cost and nutrient density. These guides also urged consumers to plant their own gardens and farms, and they included four different meal plans: economically, low cost, moderate cost and expensive. After-war guides also included cheaper meat substitutes such as beans and other legumes as well as conservation hints (Haughton, et. al. 1987). At the present, USDA/HNIS develop sets of nutritious meal plans at the same four costs: thrifty, low cost, moderate cost and liberal. At each cost level, there are

foods for men, women and children in eleven sex-age categories. These meal plans show quantities of different types of foods to buy and prepare nutritious meals (Cleveland & Kerr 1988).

5. Usability, universality and Flexibility:

Other relevant criteria used in the developing of food guides are those regarding the concept that any guide not well-designed technically will fail because it will not be understandable, memorable and/or effectively used by the target audience. To be sure that a guide will be understood by the target population it must meet the following criteria :

- * Usability: should be designed to be useful for the target audience, using the common names given to foods, adapting food groups in the same way that the audience does.
- * universality: should be applicable to the entire healthy population regardless of sex, age, or level of physical activity.
- * Flexibility: should allow consumers to eat according to their cultural, economic, ethnic or religious preferences while meeting their nutritional needs.

(USDA 1993, Cronin, et. al. 1987, Dodds 1981, Light & Cronin 1981)

The objectives of the food guidance presented in the American Red Cross Nutrition Course are very useful to illustrate these points:

1. To use food groups as an organizing framework for the nutrition information and to pattern these groups after those previously used.
2. To design the system around the kinds of foods that most American eat, and to illustrate the nutritional contributions these foods make to diets.
3. To allow maximum flexibility in selecting foods to meet nutrient needs.
4. To develop a framework for food choices that allows individuals differing by sex, age and level of physical activity to meet their nutritional needs by choosing different amounts of foods from the same menu.

(Cronin, et. al. 1987)

In other words, to meet these criteria a guide should group foods according to nutrient contents but also in the way that the foods are purchased, cooked, served, and consumed by the population (USDA 1993, Light & Cronin 1981, Guthrie 1987).

6. Diet and Health Issues:

Since the beginning of the development of dietary guidelines, the relationship between diet and health has been evident, but the focus has been shifted from health problems by deficiency to health problems by excess. The concern of the first guides was that all individuals could meet their energy and nutrient needs (including those nutrient "unknown"). Over the years the concern was shifted to the role of nutrition in health promotion and disease prevention. (Glanz & Damberg 1987). Epidemiological research indicated that the major nutritional problems among Americans were a result of dietary excesses and imbalances rather than deficiencies of single nutrients. By the mid 1970's it became evident that leading causes of death in the United States, such as coronary heart disease, certain cancers, stroke, diabetes and cirrhosis of liver, were linked in part to consumption of diets too high in fat, calories, salt and alcohol, and too low in fiber and other potentially protective factors (Stephenson 1987). It was clearly demonstrated in the Surgeon General's Report on Nutrition and Health (DHHS/1987) that present scientific evidence that links specific dietary factors to specific chronic diseases. The four principal conclusions of this report are:

- * Dietary changes can improve the health prospects of many Americans
 - * Overconsumption and imbalances in intake of certain dietary components increase the risk of chronic diseases among Americans
 - * Of primary importance is the need to reduce consumption of fat, especially saturated fat
 - * Similar dietary changes apply to prevention of multiple chronic disease conditions
- (Nestle 1988).

The next section will review the basic recommendations to develop dietary guidelines in

Latin America, with examples from Venezuela and Mexico, as well as different food models used in the United States, Latin America and other countries around the world.

D. LATIN AMERICAN FOOD GUIDELINES AND FOOD GROUPS

1. Bases to Develop Latin American Food Guidelines:

The United Nations University with the Cavendes Foundation from Venezuela organized, in November 1987, an international meeting with the participation of 23 nutrition leaders from different Latin American countries and representatives from the Panamerican Health Organization.

The purpose of the meeting was to review and up-date the nutritional bases to develop dietary guidelines according to the cultural, ecologic, and socio-economic characteristics of these countries as well as the nutritional pathology, food habits and food supply. The most important outcomes from this meeting are summarized below (Universidad de las Naciones Unidas 1988):

a. General considerations:

To establish the nutritional goals the group used the RDA's developed by different organizations and expert groups, such as FAO, WHO and UNU. This information was reviewed and adapted to the Latin American context.

The group considered that to develop the dietary guidelines, each country should assess the following characteristics:

- * Nutrition and health status among the population
- * Socio-economic differences among the population
- * Groups at risk
- * Dietary differences among the population
- * Interactions between components in the diet (Universidad de las Naciones Unidas 1988)

b. Nutritional Goals:

The group made specific recommendations for energy and 16 nutrients estimated by 1000

Calories, using the family as the unit to make the recommendations. Table No. 4 summarizes these recommendations:

c. Information needed to translate nutritional goals into dietary guidelines:

In order to develop the dietary guidelines, once the nutritional goals and the criteria have been established it is necessary to find out basic information such as:

- * Food supply during recent years
- * Food composition of local foods
- * Food availability in terms of price and seasonality
- * latest balance sheet, consumption survey and spent on food in comparison with nutritional goals
- * Nutritional pathology present among the population
- * Food habits, traditions, hygiene and educational level of the population
- * Social and economic stratification, rural and urban population
- * Groups at risk

The guides should be developed as a coordinate effort with the participation of different sectors, such as health, education, agriculture, planning, universities, scientific societies, related institutions and organizations.

To disseminate this information among the population it is necessary to produce educational material adapted to the target audience and to have the active participation of the government and the private sector (Universidad de las Naciones Unidas 1989).

As a result of this meeting, in 1990 the National Nutrition Institute from Venezuela and the Cavendes Foundation developed the Venezuelan dietary guidelines following the recommendations given. In 1993, the National Nutrition Institute "Salvador Zubiran" from Mexico presented the Mexican Dietary Guidelines.

TABLE No.4
NUTRIENTS REQUIRED TO MEET NUTRITIONAL NEEDS OF A FAMILY

Nutrients	Rec/ day/ 1000 Kcal	Comments
Energy		Preschool children: 0.6 - 0.8 Kcal/ml of liquid food. Approx. 2 Kcal/ g of solid food. Other ages: 1.4 - 2.5 Kcal/g total diet.
Protein	25 - 30 g	10 -12 % from total energy. Less than 50% from animal sources.
Fat	20 - 28 g	20 - 25 % from total energy, including natural fat from foods Cholesterol: Adults <100 mg/1000 kcal. Children down to 300 mg/day
* Saturated	7 - 9 g	Down to 1/3 of total fat
* Mono-unsaturated	7 - 9 g	
* Polyunsaturated	7 - 9 g	Ratio polyunsaturated/ saturated > 1
Carbohydrates	150 - 175	60 - 70 % from total energy. Decrease sucrose except when is needed to increase energy density
Fiber	> 8 g	Measured as soluble fiber and not as raw fiber
Vitamin A	300 mcg RE	1 Retinol Equivalent (RE)= 1 mcg of retinol or 6 mcg of Beta-carotene
Vitamin C	25 mg	Feed together with food sources of iron
Folate	80 mcg	Frequently is necessary to supplement 200-300 mg during pregnancy.
Thiamin	0.4 mg	
Riboflavin	0.6 mg	
Niacin	7 mg	60 mg of tryptophan = 1 mg of niacin
Iron	5, 7 or 14 mg	Diets with iron availability high, medium or low respectively. Frequently is necessary supplement 30-60 mg//day during pregnancy
Zinc	6 - 10 mg	Change according to zinc sources and characteristics of the diet
Calcium	500 mg	Preschool children and adolescents should eat calcium rich foods
Iodine		100-200 mcg/day in regions without goiter 300-400 mcg/day in regions with goiter . Salt fortification recommended
Fluoride	0.7 - 1.0 mg	Water with 1 ppm meet requirements
Sodium		Limit salt intake to 5 g/day. In conditions of excess sweat up to 10 g

Source: United Nations University and Cavendes Foundation. Guías de Alimentación. Bases para su Desarrollo en América Latina.

2. Venezuelan and Mexican Food Guidelines:

The dietary guidelines from Venezuela were developed by a group of professionals from different institutions: National Institute of Nutrition (INN), Cavendes Foundation, School of Nutrition of the University of Caracas Venezuela (UCV) and Simon Bolivar University . These guides were developed keeping in mind three aspects: the target audience is the general population; these guides are directed to a country in economic crisis, and they are directed to the healthy population. The document includes 12 guides and 40 messages related to the guides as well as a synthesis of the nutritional goals for the country and the names of the members of the advisory committee who will review these guides (Instituto Nacional de Nutricion 1990).

The Mexican dietary guidelines were published in 1993 by the National Institute of Nutrition "Salvador Zubiran" (INNSZ) with the support of the Panamerican Health Organization (PAHO). These guidelines are centered around the concept of the "ideal diet" and are directed to the general population. The document includes the 10 nutritional goals, dietary guidelines during the first year of life, dietary guidelines for all the population, ideal diet, a section about how to use this material, and a food composition table of the most common foods eaten by Mexicans. As the U.S. American Guidelines, Mexicans are using the Pyramid as a food model but adapted to the Mexican situation. They show four groups in the pyramid: Fruit and Vegetables (in the base), followed by Cereal, Animal foods and Fats and sugar at the top. They subdivided each segment of the pyramid allocating high nutrient foods of each group, from left to right and from the bottom to the top of each level (Chavez, et. al 1993). The guidelines presented in both guides are summarized in table No. 5.

As is shown, there are six similar guidelines in both guides (marked *), related to: variety diet, weight maintenance, breastfeeding, avoid to much fat, sodium and alcohol. The Venezuelan guidelines have a wide approach giving recommendations related to the importance of meals in family relationships, to saving of money when buying foods, and the hygiene of food preparation. While the Mexican guides focused on the importance of eating food from the different groups, it is evident that each guide was developed according to the realities of each country, using local

foods and local names for the different foods. The Mexican guide shows the model to disseminate this new knowledge; the Venezuelan guide just mentions the use of the three basic groups of food to teach these concepts.

TABLE No 5
DIETARY GUIDELINES FROM VENEZUELA AND MEXICO

VENEZUELA	MEXICO
Eat a variety of food daily *	Avoid monotony in your diet, eat a variety of food. Change day to day and meal to meal; choose among all the variety offered in the market in the proportions given by the pyramid.
Eat enough to maintain adequate weight *	Avoid obesity, watching your weight according to the ideal for your height
Breastfeeding is the best for children under six months *	Breastfeed your babies until the fourth month and then begin with a mix diet
Use vegetable oil when cooking and avoid fat from animal source *	Limit the intake of fat when cooking and choosing non fat foods. (not >30% of the calories). Reduce saturated fat intake (<10%of calories). Reduce cholesterol intake (<300 mg/da
Moderate salt consumption *	Limit the intake of sugar and salt. Avoid table salt and add sugar to your beverages (coffee, tea, refreshments and juices)
Alcoholic beverages are not part of a healthy diet *	Limit the intake of products with an excess of preservatives (colorants, flavorings, etc); avoid alcohol and smoking
Eat food from animal sources with moderation	Include in each meal a portion of meat chosen with little fat
Get the fiber your body need from vegetables	Eat at least 2 portion of vegetables in each meal
	In each meal eat a variety of grains, choosing integral grains and combining them with cereals and legumes
	Increase your physical activity, practice any aerobic exercise for 20 to 30 minutes , four or five times a week
Eat with your family	
Water is needed for life; drink it help to keep healthy	
Practice hygienic habits when manipulating foods	
Make a good administration of your money when select and buy foods	

(Instituto Nacional de Nutricion 1990, Chavez, et. al 1993)

Comparing these two guidelines with USA guidelines there are high similitude, with the exception of breastfeeding, the remain similar guides (marked *) are common for the three guides.

We also can use the criteria defined by Light (Light & Cronin 1981) to evaluate a guide in terms of:

- * The specification of objectives: the three guides includes the objective, which is to recommend what the population should eat to be healthy.

- * The clear designation of audience: all are directed to the healthy population over 2 years old. The Venezuelan and the Mexican guides includes a specific section regarding infant feeding because of the problem of infant mortality in these countries.

- * The nutrient level expected: the USA guidelines gives information about calories and fats and cholesterol in the guide booklet, but the nutritional goals are clearly defined in other documents. The Mexican guide just mention fat and cholesterol recommendations, and the Venezuelan includes, as an appendix, the nutritional goals. The Three guides define precisely their food groups and the foods included in each one. But only the USA guidelines gives precise information about suggested servings from each group. The Mexican provides less precise information ,(i.e. "includes two portions of vegetable group in each meal"), but doesn't define the portion size, and for the other food groups the recommendations are more vague. The Venezuelan doesn't gives any recommendation about suggested servings.

- * The health/diet concerns: they are clearly specified in the three guides, in terms of prevention of chronic diseases.

To get a broad idea of food models used in Latin America and other countries, the next section presents a description of different food model.

3. Food Groups used in Latin America and Other Countries:

For the purpose of this report guides from 14 different countries have been reviewed. In order to facilitate comparisons among guides, the information has been summarized in Table No. 6. It is important to establish that some of the guides presented in this report come from publications of Non-Governmental Organizations working in these countries. Therefore, sometimes the models shown might not represent the official models used in these countries.

TABLE No. 6
FOOD GROUPS USED IN LATIN AMERICA AND OTHER COUNTRIES

Country	#	Rich Protein Foods	Cereals	Vegetables & Fruits	Others	Shape
Argentina 1885 (a)	5	milk & deriv. meats & eggs	cereals & legumes	fruit & vegetables	fats, sweets & sugars	3 Squares
Chile 1986 (b)	3	building foods	energetic foods	regulating foods	energetic foods	none
Brazil 1981(c)	3	building foods	strengthening foods	protecting foods	-----	none
Jamaica 1985 (d)	6	foods from animals	staples legumes & nuts	green fruits leafy veg.	fat & substitutes	none
Honduras 1989 (e)	3	growing foods	strengthening foods for work	protecting foods against sickness	strengthening foods for work	none
Mexico 1993(f)	4	foods from animals	grains & derivatives	fruits & vegetables	-----	pyramid
USA 1991 (g)	6	milk & deriv. fish, meat & eggs	bread, cereal, rice & pasta	vegetables fruits	fats, oils & sweets	pyramid
Venezuela 1990 (h)	3	milk, meat & eggs	grain, cereals & starchy fruits	fruits & vegetables	-----	none
Suva-Fiji 1988 (i)	3	body building	energy	health	energy	table w/ 3 rows
India 1990 (j)	3	foods for growth	foods for energy	foods for protection	-----	3 baskets
L'afrique 1987 (k)	3	building foods	energetic foods	protective foods	energetic foods	3 squares
Indonesia 1993 (l)	3	building foods	energy foods	regulation foods	energy foods	none
Mediterranean-1993 (m)	10	fish milk eggs red meat	bread & grains beans, nuts & legumes	fruits vegetables	olive oil sweets & olives	pyramid
Swedish 1987 (n)	7	meat fish & eggs dairy products	cereal potatoes & roots	leafy fruits vegetables	fats	circle

(# = Number of food groups)

- a) Centro de Estudios sobre Nutricion Infantil 1985.
 c) Watcher 1981.
 e) Velazquez 1989.
 g) USDA 1992 [b],[c].
 i) South Pacific Community Nutrition Project 1988.
 k) Dos-Santos 1987.
 m) International Conference on Diets of Mediterranean 1993.

- b) Instituto de Formacion y Capacitacion Popular 1986.
 d) Caribbean Food and Nutrition Institute 1985.
 f) Chavez, et. al. 1993.
 h) Instituto Nacional de Nutricion 1990.
 j) Bajaj 1990.
 l) World Neighbors 1993.
 n) Bruce 1987.

Only the guides from USA, Venezuela and Mexico are official publications. Taking this warning into account, the most important findings of the analyses of the different models are:

- * Two thirds of the countries (9/14) use the same three food groups.
- * Half of the countries (7/14) name the food groups by the function in the body of the nutrients provided by each food group (i.e. "building foods") and the other half give common food names to the groups (i.e. "foods from animals"). It would be interesting to know which name is more easily remembered by the population, and how easy is it for low literacy individuals to match and remember the name of a function (i.e. "protective/regulation foods") for specific foods, and how easy is it for them to understand these concepts.
- * Half of them (7/14) show a specific figure to disseminate this concept, but all the guides show foods drawn. It could be easier if the guides include a model to facilitate the association and remembrance of the food groups.
- * It is evident that local foods were used in the development of these models, the naming, and the drawing of food consumed by the population. Despite the use of the same name for a group, the foods included could be different according to the cultural differences and food availability in each country.
- * There are not indications the about number of portions to be consumed from each group, with the exception of USA, India and some information in the Mexican.
- * It is evident that all guides are directed to the healthy population and in the case of developing countries, are directed to low literacy people.

(Centro de Estudios sobre Nutricion Infantil 1985, Instituto de Formacion y Capacitacion Popular 1986, Watcher 1981, Velazquez 1989, Chavez, et. al 1993, Bruce 1987, Instituto Nacional de Nutricion 1990, International Conference on Diets of the Mediterranean 1993, South Pacific Community Nutrition Program 1988, Bajaj 1990, Dos-Santos 1987, World Neighbor 1993, Caribbean Food & Nutrition Institute 1985, USDA 1990[b], USDA 1992[a],[b],[d])

A brief evaluation of these guides in terms of the criteria reported in Section B of this document is described below:

1. Nutrient Requirements: Are only specific in the Venezuelan guides but because this material is directed to general population, without nutrition training, it is not recommended to

include this information.

2. Food Composition: Food groups are clearly established in all the guides, serving size and suggested servings are only included in the USA and the Indian guide and are less precise in the Mexican guide.

3. Food Habits: Are clearly identified in all guides, including local foods with local names and some times local recipes.

4. Economic and Food Supply Concerns: Are undoubtedly mentioned in the guides for developing countries. The Venezuelan guide mentioned that it is intended for a country in economic crisis. Food supply also is mentioned, recommending the use of locally grown foods according to seasonality (Instituto Nacional de Nutricion 1990). The Mexican guide mentioned the problem of 2 millions of Mexican living in poor socio-economic conditions in terms of: "...for them there is no one dietetic recommendation, they should eat what they find..." (Chavez, et. al 1993). The economic criteria is one of the most important to be consider in the development of dietary guidelines for developing countries, such as Central America. In Central America, 70% of the 29 millions of inhabitants live in poverty conditions (INCAP 1992), but guidelines reviewed were not clear enough regarding how to address the economic problem, they just mention the problem but don't give specific advice.

5. Usability, Universality and Flexibility: One of the major concerns about this criteria is the name of the food groups. As was shown, half of the guides use function names for the food groups, but this may not be the way that foods are conceptualized and chosen by the population. If we take into consideration that a large proportion of the population of developing countries has low literacy skills, it could be considered that these guides have low usability by this population. Axelson (1987), reported the effectiveness of multidimensional scaling as an appropriate technique to examine whether the food grouping represented by a food guide reflects consumer's food classification system. It might be interesting to apply this technique to evaluate the usability of dietary guidelines. On the other hand, some of the guides, like the Venezuelan, the Mexican, and the Brazilian offer practical tips for the housewife regarding the buying, cooking and preserving of foods. In terms of universality, all the guides meet this criteria. And the flexibility criteria should explain why these guides do not include suggested servings. Because

they are directed to populations with different economic levels, and in the poorest countries, the best advice that could be made is to eat more of the food available. Regarding quantitative guidelines, Murray (1987), reported that the public can't deal with quantitative guidelines and may have a negative impact of turning off consumers who don't want eating to be an intellectual challenge. Research regarding populations' perception of quantitative guidelines and preferences, of non-quantitative vs. quantitative guidelines, should be conducted in the target population.

6. Diet and Health issues: This criteria is identified in the USA, the Mexican and the Venezuelan guidelines. The other guidelines look like they have information regarding to this issue but it cannot be confirmed because we just have access to the section on the information related to food groups.

The influence of the US Dietary Guidelines on other countries is evident. During the Basic Four era, almost all models used around the world were circles. At the present, when USA changed the food model from a circle to a pyramid, countries from two different sides of the world (Mediterranean countries and Mexico) have implemented the pyramid as their food model.

The review of different experiences around the world gave me a theoretical framework that I applied to develop Guatemalan Dietary Guidelines, which is presented in the next chapter.

IV. GUATEMALAN DIETARY GUIDELINES

This chapter presents the application of the findings of the bibliographic research, to develop a proposal of Dietary Guidelines for Guatemala. This section includes the technical aspects used to define the guides, the technical guides themselves, and suggested messages to disseminate this guides among the target group. Also included are three graphic designs which pictorially represent the guidelines.

A. BASIC CRITERIA TO DEVELOP DIETARY GUIDELINES

Considering the Guatemalan context, and the bibliographic review, presented in last chapter, we consider to use the following criteria to develop the Guatemalan dietary guidelines:

1. Target population
2. Dietary guidelines objectives
3. Recommended Dietary Allowances
4. Definition of food groups
5. Definition of serving size
6. Determination of number of servings
7. Dietary habits
8. Economic and food supply concerns
9. Usability, universality and flexibility
10. Health and diet issues

1. Target Population:

The target population for these guides is the healthy Guatemalan population, more than two years old, from rural and marginalized urban areas, with a low income level.

This target population was selected because it is considered a high risk population. Rural and marginalized urban populations have the same dietary habits, because marginalized urban

population is formed by immigrants from rural areas.

Adaptation of these guides for other population groups is needed. For example, a special recommendation is made to develop messages related to chronic diseases prevention.

2. Dietary Guidelines Objectives:

The general objective of the food guides is: " To give enough advice to the Guatemalan population to allow them a better selection of food in terms of nutritional quality". These guides are oriented to correct malnutrition problems which are the most common among the target group, but they will include messages related to chronic diseases prevention.

3. Recommended Dietary Allowances:

Table No.7 shows the Recommended Dietary Allowances (RDA) of energy, recommended by INCAP. Considering these energy recommendations , three calories level diets were established:

Level A: 1300 Calories

Level B: 2200 Calories

Level C: 3000 Calories

As shown in Figure No.4, these three levels span the recommended food energy ranges for most of the Guatemalan population.

RDA was the base to establish the nutritional goals. The nutritional goals are presented in Table No.8. Is important to say that these guides are based on a total diet, it meant to meet 100% of RDA.

TABLE No. 7
RECOMMENDED ENERGY ALLOWANCES

Age	Activity	Weight(kg)	Kcal/Kg/day	Kcal/day
Males				
10-11.9	Light	34	60	2050
	Moderate		65	2200
	Heavy		70	2400
12-13.9	Light	42	50	2150
	Moderate		55	2350
	Heavy		65	2650
14-15.9	Light	52	45	2350
	Moderate		50	2650
	Heavy		60	3050
16-17.9	Light	62	45	2650
	Moderate		50	3000
	Heavy		60	3400
18-64.9	light	68	40	2650
	Moderate		45	3100
	Heavy		55	3600
>65	Light	65	30	1900
	Moderate		35	2200
	Heavy		40	2600
Females:				
10-11.9	Light	36	50	1750
	Moderate		52	1900
	Heavy		55	2000
12-13.9	Light	43	45	1850
	Moderate		47	2000
	Heavy		40	2150
14-15.9	Light	48	40	1900
	Moderate		45	2100
	Heavy		50	2350
16-17.9	Light	50	40	1950
	Moderate		45	2150
	Heavy		50	2400
18-64.9	Light	53	35	1950
	Moderate		40	2100
	Heavy		45	2350
>65	Light	55	30	1650
	Moderate		35	1850
	Heavy		40	2100

FIGURE No. 4

RECOMMENDED RANGES OF FOOD ENERGY INTAKE FOR VARIOUS SEX- AGE
GROUPS AND RANGE FOR FOOD GUIDANCE SYSTEM

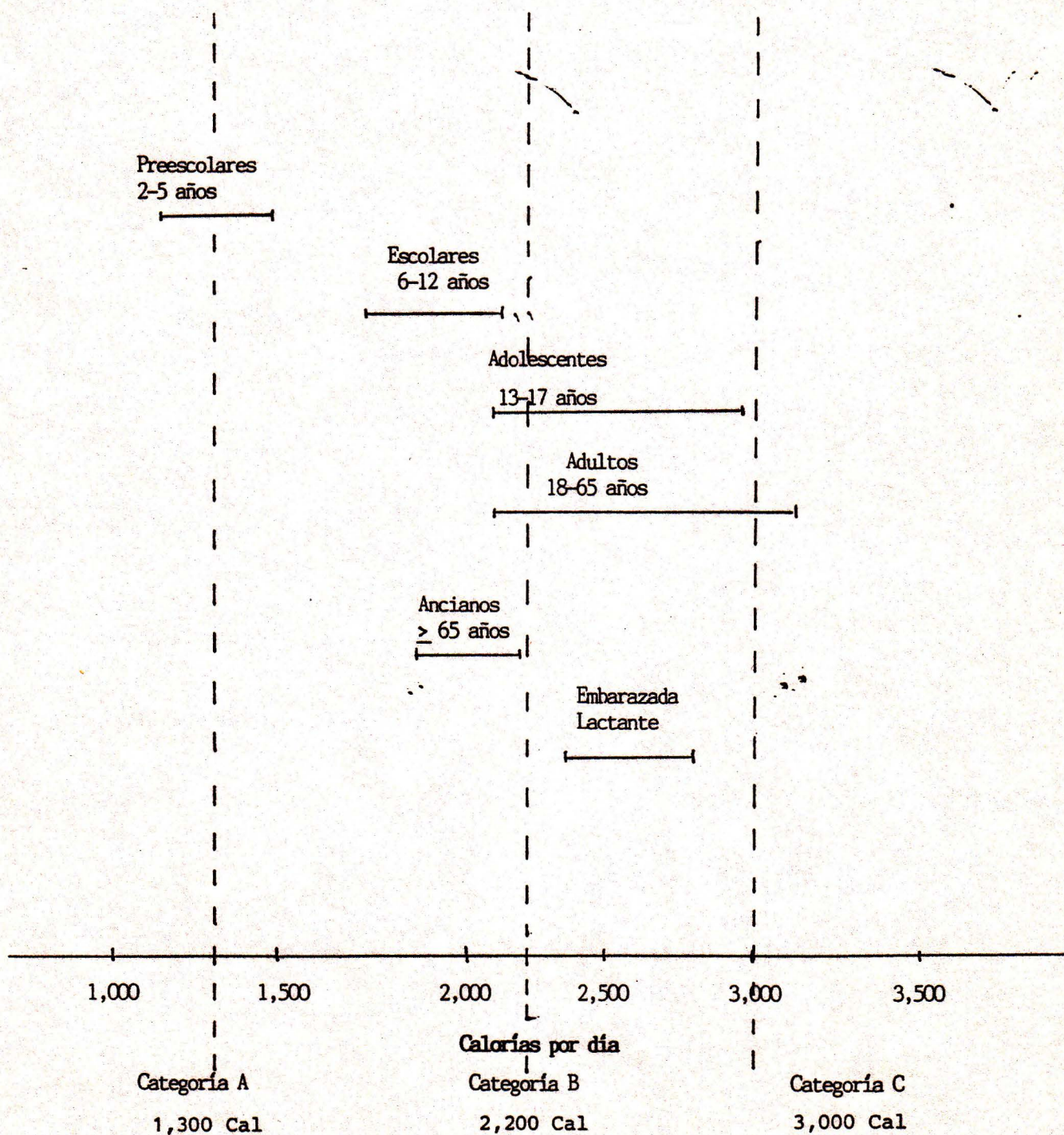


Table No. 8 NUTRITIONAL GOALS FOR THE DIETARY GUIDELINES

NUTRIENT	GOAL	ACTIVITIES
ENERGY	To assist individuals in selecting diets that have an appropriate amount of food energy to maintain a healthy weight.	To develop a framework for selecting diets that span the recommended food energy ranges for most Guatemalan population: 1300-3000 calories.
PROTEINS, VITAMINS & MINERALS	To assist individuals in selecting diets that meet the RDA for all nutrients.	<p>To give particular emphasis to the selection of foods that are sources of problem nutrients among the target population, promoting consumption of:</p> <ul style="list-style-type: none"> * Proteins of high biologic quality * Diets with 10-15% of food energy from proteins * Foods sources of Vitamin A * Foods sources of iron and suggest ways to improve the iron availability * Iodized salt and sugar fortified with vitamin A * A wide variety of foods to help assure adequate amount of nutrients
FATS	To assist individuals in improving their caloric intake though the ingestion of polyunsaturated fats.	<ul style="list-style-type: none"> * To provide guidance that, if followed, would result in diets with 20-25% of food energy from fats * To promote the ingestion of polyunsaturated fats.
CARBOHYDRATES	To assist individuals in selecting diets that provide adequate amounts of complex carbohydrates.	<ul style="list-style-type: none"> * To provide guidance that, if followed, would result in diets with 55-65% of food energy from carbohydrates. * To promote diets based on cereals and beans, fruits and vegetables, enriched with small amounts of other foods.
SUGARS	To encourage the target population to consume sugar fortified with vitamin A.	<ul style="list-style-type: none"> * To provide guidance that, if followed, would result in diets with 10% of food energy from sugar * To encourage the target population to buy and consume sugar fortified with vitamin A
SALT	To encourage the target population to consume salt fortified with iodine.	<ul style="list-style-type: none"> * To encourage the target population to buy and consume salt fortified with iodine
ALCOHOL	To assist the target population in recognizing that alcohol consumption can be unhealthy.	<ul style="list-style-type: none"> * To encourage individuals who consume alcoholic beverages to moderate their intake * To encourage pregnant and lactating women, as well as, adolescents to avoid alcoholic beverages.

In the establishment of nutritional goals reports from the following groups were taken into account:

- * Recommended Dietary Allowances from INCAP
- * Nutritional Goals for Latin America UNU/CAVENDES
- * Recommended Dietary Allowances from FAO/WHO.

4. Definition of Food groups:

According to the Basic Basket of Foods, based on the last 1991 Nationwide Food Consumption Survey conducted in Guatemala, foods can be divided into the following groups:

Dairy products
Eggs
Meats
Beans
Cereals
Vegetables
Fruits
Fats
Sugars

To simplify the remembrance of the food groups, we suggest reducing food groups to the following categories:

Grains
Vegetables
Fruits
Meats and Eggs
Dairy products
Fats
Sugars

Is important to say that results from the 1991 Nationwide Food Consumption Survey

show that the energetic sources in the Guatemalan diet are: maize, beans, breads, sugars and fats. This information should be considered to calculate the recommended diet and to elaborate the graphic design used to distribute this information.

The foods included in each group were taken from the Basic Basket of Foods and from the 1991 Nationwide Food Consumption Survey and are presented in Table No.12.

5. Determination of Serving Size:

To determine the serving size, several aspects were taken in account: nutritional value of the food included in a same group, household measures, and typical serving sizes (Information about this last point was difficult to find; information available is related to a specific area of the country). Table No. 9 shows the foods groups and the suggested serving sizes.

TABLE No.9
SERVING SIZE FOR FOOD INCLUDED IN EACH FOOD GROUP

FOOD GROUPS	SERVING SIZE AND WEIGHT IN GRAMS
CEREALS	1 tortilla (30 g) 1 french bread (20 g) 1 sweet bread (23 g) 1/2 cup of cooked beans (100 g) 1/2 cup of cooked rice (100 g) 1/2 cup of cooked spaghetti or noodles (100 g)
VEGETABLES	1/2 cup of cooked vegetables (100 g) 1 cup of raw vegetables (100 g)
FRUITS	1/2 cup of chopped fruit (100 g) 1/2 cup of juice fruit (120 g) 1 small fruit
MEATS	1 ounce of cooked lean meat, poultry, fish or entrails (30 g) 1 egg
DAIRY PRODUCTS	1 cup of milk (240 g) 1 cup of Incaparina (240 g) 1 cup of Bienestarina (240 g) 1 ounce of fresh cheese (30 g)
SUGAR	1 teaspoon of sugar (5 g)
FATS	1 teaspoon of oil (5 g) 1 teaspoon of margarine (5 g) 2 tablespoons of sour cream (30 g)

6. Determination of Number of Servings:

The nutritional value of serving size in each food group was determined and the range of servings needed to meet the nutritional goals was calculated. Tables No. 10 and No.11 present the information related to both issues.

TABLE No 10

NUTRITIONAL VALUE OF SERVING SIZES IN EACH FOOD GROUP

Group	Calories	Proteins (g)	Carbohy- drates (g)	Fats (g)	Vitamin A (mcg)*	Iron (mg)
Cereals	68	2	15	--	--	0.6
Vegetables	36	2	--	--	216	1.7
Fruits	40	-	10	--	11	0.4
Meats	73	7	--	5	616	1.0
Dairy P.	138	7	11	8	125	0.0
Sweets	20	-	5	--	50	--
Fats	45	-	--	5	--	--

(* Vitamin A in Retinol Equivalents)

TABLE No. 11

RECOMMENDED SERVING SIZES FOR A DAY AT THREE CALORIES LEVEL

	LOWER 1300 Cal	MODERATE 2200 Cal	HIGH 3000 Cal
Cereal Group Servings	8	16	20
Vegetables Group Servings	2	4	5
Fruits Group Servings	2	3	5
Meats Group Servings	2	3	4
Dairy Group Servings	1	1	2
Sweets Group Servings	5	9	12
Fats Group Servings	5	8	11

CUADRO No. 12

DAILY FOOD INTAKE BY PERSON AND BY URBAN AND RURAL POPULATION GUATEMALA, 1991*

Food Groups	Total Intake	u rban Area	Rural Area
MAIZE	383	251	454
tortilla	382	251	454
WHEAT	72	107	51
Sweet bread	28	40	21
French bread	24	43	13
Pasta	20	24	17
RICE	29	32	27
BEANS	58	51	62
FATS	18	25	14
Vegetal oil	14	18	11
Pork fat	1	-	1
Margarine	3	7	2
SUGAR	80	84	77
White sugar	78	84	74
Dark sugar	2	-	3
VEGETALBES	144	150	140
Tomatoe	33	42	28
Onion	11	13	10
Potatoe	29	29	29
Guisquil	47	41	50
Green beans	9	9	9
Carrots	3	5	2
Other vegetables	12	11	12
FRUITS	71	96	58
Banana	27	32	24
Plantain	21	31	16
Avocado	7	9	6
Orange	10	14	8
Other fruits	6	10	4
EGGS	24	33	20
DAIRY PRODUCTS	47	75	33
Liquid milk	30	45	21
Podwer milk	4	9	2
Sour cream	6	11	4
Fresh cheese	6	7	5
Other cheeses	1	2	1
MEATS	43	55	35
Pork meat	3	3	3
Poultry	19	24	15
Meat	17	24	13
Fish	4	4	4
BEVERAGES	48	54	40
Coffee	9	9	10
Coke	35	50	27
Bear	4	5	3

* Source: Guatemalan Nationwide Food Consumption Survey, 1991

b. Energy intake by person:

Graphic No.1 presents the percentage contribution of different food to total energy intake. As it's shown, 64.8% of the calories are provided by cereals. Sugar makes another important contribution to energy intake.

c. Protein intake by person:

Graphic No. 2 presents the percentage contribution of different foods to total protein intake. This information shows that, as the same with calories, cereals provide 70% of the diet protein.

8. Economic and Food Supply Concerns:

Taking into account the hard socio-economic condition of the country, it is suggested focus these guides on aspects of proportionality and variety, without any specification regarding number of serving sizes.

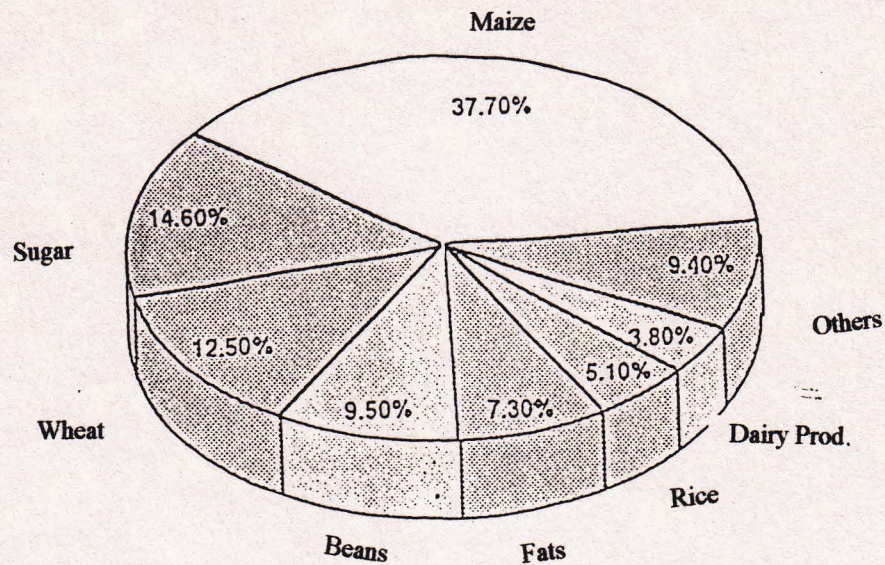
According to information collected by the 1991 Nationwide Food Consumption Survey, there are variations in the type and quantity of food intake at different economic levels. Lower incomes represents more monotonous diets. The classic example is maize consumption. with lower income families, maize intake provides 43% of total food energy; with higher income families, maize intake supply only 25% of total food energy. This means that the Guatemalan population meets their energy requirements with this cereal which still is one of their most available food.

9. Utility, Universality and Flexibility:

The utility criterion is that guides should be useful to the target audience using common names given to foods, adapting food groups in the same way that the audience does. This criterion was met, using the same groups used and proposed by the Basic Basket of Foods.

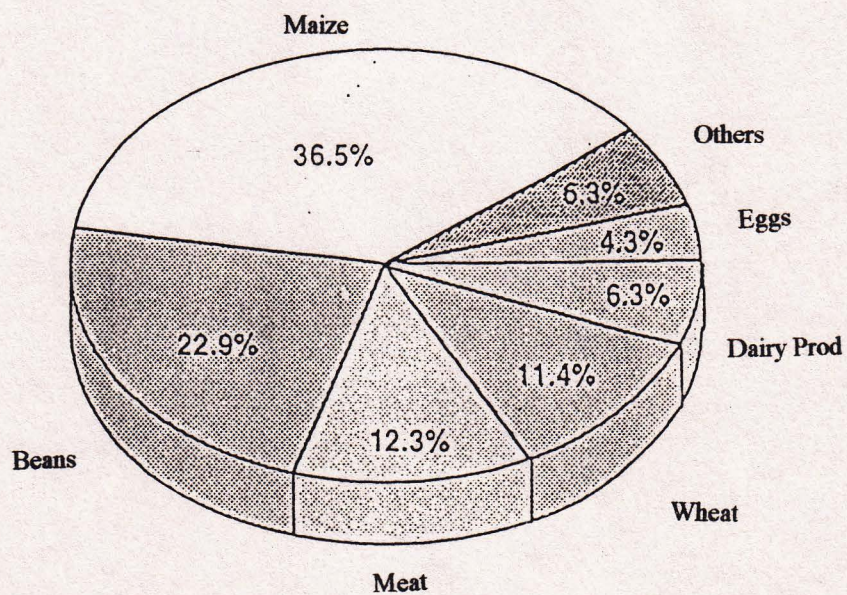
GRAPHIC No. 1

**PERCENTAGE CONTRIBUTION OF DIFFERENT FOODS TO
TOTAL ENERGY INTAKE**



GRAPHIC No. 2

**PERCENTAGE CONTRIBUTION OF DIFFERENT FOODS TO
TOTAL PROTEIN INTAKE**



The universality criterion is that guides should be applicable to the entire healthy population regardless of sex, age, or level of physical activity. This criterion was included because these guides should be applicable to all target population.

The flexibility criterion is that guides should allow consumers to eat according to their cultural, economic, ethnic or religious preferences while meeting their nutritional needs.

Taking in account all these criteria, it was decided to present general guides, without specific information about number of serving sizes. The reasons for this decision are:

- * The Guatemalan population eats fresh food instead of prepared food, which makes it very difficult to establish serving sizes.

- * When prepared foods are eaten they are made at the local level (french bread, sweet bread) or at home (tortillas); it is almost impossible to establish serving sizes or nutritional information, because they are made in different sizes, according to the personal criteria of the maker.

- * Food guides are blueprints not recipes that should be followed as prescriptions.

- * To recommend serving sizes is out of socio-economical reality of Central American countries. An effort should be made to improve the nutritional quality of the diet with available food.

- * Bibliographic review reported that the public can not deal with quantitative guidelines and that they may have the negative impact of turning off consumers who don't eat to be an intellectual challenge (Murray 1987).

- * Information regarding serving sizes should be used in education material directed to nutritionist.

10. Health and Diet Issues:

Guatemala as other Central American countries confront epidemiological nutrition problems. According to the literature, the major Guatemalan health problems are:

Problems by Deficiency:

- * Protein-energy malnutrition
- * Vitamin A deficiency
- * Iron deficiency
- * Iodine deficiency

Problems by Excess:

- * Obesity
- * Diabetes
- * Cancer
- * Cardio-vascular diseases

According to these health facts, the guides should be defined in terms of correction of the deficiencies but include messages regarding the prevention of chronic diseases.

B. FOOD GUIDELINES SUGGESTED

Taking into account the information available, the food guides suggested for Guatemalan population are:

1. Eat a variety of foods
2. Increase your intake of high quality protein foods
3. Eat foods rich in Vitamin A
4. Consume foods rich in Iron
5. Consume iodized salt and sugar fortified with Vitamin A
6. Maintain your fiber consumption
7. Maintain a healthy weight
8. Avoid excessive consumption of alcoholic beverages

JUSTIFICATION OF THE FOOD GUIDELINES

1. Eat a Variety of Foods:

Only through the consumption of a variety of foods the intake of all nutrients needed to stay healthy, can be assured.

Considering that the Guatemalan diet is based in maize and beans, this practice should be reinforced, but it should also be recommended that Guatemalans improve their basic diet with vegetables and fruits, as well as, small portions of meat, milk, eggs or Incaparina, fats and sugar. This variety will allow a better intake of all nutrients and a better biologic use of them.

2. Improve the Intake of High Quality Protein Foods:

Considering that protein-energy malnutrition is a prevalent problem in Guatemala, a special effort should be made to improve the protein intake of the population.

Quality of the proteins should be measured in terms of their amino-acid pattern or in terms of digestibility. Proteins are better utilized by the organism when essential amino-acids are contained in the right proportion. Proteins from animal sources generally have better proportions of essential amino-acids and have a digestibility of 95%, that's why animal protein are high quality proteins. Quality of proteins from vegetal sources is limited by the lack of one or more essential amino-acids and by their lower digestibility which varies from 75-85%

When vegetal proteins are complemented with animal proteins, their amino-acid pattern are improved as well as their digestibility in 85-90%. In addition iron absorption is improved too. For these reasons it is important to recommend the intake of small quantities of animal proteins daily.

In addition it is recommended to reinforce the use of vegetal mixes such as Incaparina and Bienestarina, as low cost foods with high nutritional value. On the other hand the use of complementary proteins, such as, maize/beans or rice/beans, is encouraged.

3. Consume Foods Rich in Vitamin A:

Vitamin A deficiency still is a health problem in Guatemala, the deficiency of this vitamin can produce visual problems starting with night blindness followed by xerophthalmia, xerosis and loss of sight. Other clinical symptoms are: keratinization of the skin, weight and height retardation, and major risk of infections. Its deficiency is also associated with high infant mortality rates.

Vitamin A is a fat-soluble vitamin, and it's found in animal sources as retinyl esters. One of the better sources of vitamin A is liver and fish liver oil. Dark green and yellow vegetables have vitamin A as Carotenoid (alfa and beta carotenes), cryptoxanthin and its precursors. The presence of fat in the diet facilitates vitamin A absorption.

One of the most important sources of this vitamin in Guatemala is sugar fortified with Vitamin A, that is why, food guidelines includes a specific recommendation to consume sugar fortified with Vitamin A.

4. Consume Foods Rich in Iron:

Iron deficiency is the primary cause of anemia among Guatemalan children and adults.

As with proteins, there are two kinds of iron: Heme iron present in red meats which is well absorbed and its availability depends less on the influence of other foods in the diet. And iron non-heme iron, present in beans, cereals, vegetables and fruits, whose absorption is variable and is affected by other diet components, such as: phytic acid and fiber contained in cereals, beans and vegetables. Tannin present in tea, coffee and soup beans. And some proteins like avidin present in raw egg yolk. There are other factors that help iron absorption, like ascorbic acid and animal foods.

5. Consume Iodated Salt and Sugar Fortified with Vitamin A:

Food fortification has been a solution to control nutritional deficiencies among the

population. The most successful experiences in Central America have been fortification of salt with iodine and fortification of sugar with Vitamin A.

Iodine deficiency is another nutritional problem that affects the Guatemalan population, producing endemic goiter among adults and cretinism, physical and mental growth retardation, among children.

The principal food sources of iodine are fishes and seafood, which are not usually consumed by Guatemalan population. Other sources of iodine are: vegetables, meats, dairy products and eggs, but their iodine content depends on the content of iodine in the land in which they were produced. Central American lands are low in iodine.

By these reasons, INCAP has promoted fortification of salt with iodine as a vehicle of this nutrient. In spite of other guides recommending the use of salt only in moderation, for the Guatemalan population it is considered convenient to include a specific guide promoting consumption of iodized salt.

Vitamin A deficiency was covered in issue # 3 of this section, and as with salt, for Guatemala a specific guide regarding sugar consumption was included for two reasons: Sugar constitutes one of the five energetic foods for Guatemalan population, and it is a vitamin A vehicle.

6. Maintain your Fiber Consumption:

In most of the cases, the Guatemalan diet is rich in fiber. For this reason it is recommended to keep this practice, and to mention the importance of eating raw vegetables, fruits and tortillas. In addition, this guide could help those small segments of the population whose fiber intake is low.

7. Maintain Healthy Weight:

Weight is an indicator of health status, weight deficiency is associated with malnutrition problems excess weight is associated with obesity, diabetes, atherosclerosis, hyperlipidemia, and

other health problems.

It is very important that the population have standards to allow them to monitor their own weight. During the last few years, in addition to weight, other indicators have been recommended, such as waist-to-hip ratio to evaluate body shape, which is very important in defining a healthy weight.

8. Avoid Excessive Intake of Alcoholic Beverages:

This is a very important recommendation in a country like Guatemala, where alcoholism is increasing. It is common that men spend money destined to buy food on alcoholic beverages.

Besides social and economic problems connected with alcoholism, associated health problems should be considered. Heavy drinkers are often malnourished because of low food intake and poor absorption of nutrients by the body.

It is recommended that some people should not drink any alcoholic beverages: pregnant and lactating women, children and adolescents, individuals using medicines, and individuals who cannot keep their drinking moderate.

D. MESSAGES TO THE TARGET POPULATION

The food guidelines identified were translated into educational messages directed to the target population. During this process the following aspects were considered:

1. Definition of food guidelines in common language used by target population.
2. Translation of technical food guides into practical advice that target population can execute.
3. Development of a graphic design which facilitates the communication of the information contained in the guides.
4. Evaluation of the graphic design.

1. Translation of Food Guides into a Common Language and Actions:

Considering language commonly used by Guatemalan population, and that guides should advise practical actions, the following food guides were suggested:

- * Eat a variety of foods available.
- * Include in your daily diet small amounts of meat and entrails, specially liver.
- * Incaparina, Bienestarina and Nutritious Cookies are excellent foods that you should include in your daily diet.
- * Every day eat dark yellow or green vegetables and leaves. When possible, eat raw vegetables and fruits.
- * Be sure that the salt you eat is iodized and the sugar you eat is enriched with vitamin A.
- * Frequently eat citrus such as lemon or orange, in juice, fruit or refreshment.
- * Include corn tortillas in your daily diet.
- * Corn tortillas with beans or beans with rice are excellent foods that you should eat daily.
- * Maintain a healthy weight.
- * Alcoholic beverages are dangerous for your health, keep them away.

2. Graphic Design:

The graphic design should give the following messages:

a. Variety: The graphic represents the seven proposed food groups and gives the message to eat a varied diet.

Foods represented in each group should be:

Cereals: cooked beans

	tortillas
	cooked rice
	french bread
	sweet bread
	cooked spaghetti or pasta
Vegetables:	carrot
	yellow squash
	spinach
	tomato
	potato
Fruits:	banana
	orange
	mango
	papaya
	melon
Meats:	liver
	meat
	poultry
	eggs
Dairy Prod.	milk
	Incaparina
	Bienestarina
	fresh Cheese
Sugar:	sugar
Fats:	oil
	margarine
	sour cream

b. Proportionality: The graphic shows the proportion recommended to eat from each food group. Considering that the guide will not include information about number of servings, the concept of proportionality should be clear enough to allow the population to understand how much to eat from each food group.

c. Usability: The graphic must show a diet based on cereals, especially maize and beans, enriched with vegetables and fruits and small amounts of meats, eggs or milk.

Considering these criteria three graphics were developed:

- * Bowl
- * Basket
- * Pyramid

Figures No. 5,6 and 7 show the models proposed.

3. Graphic Design Evaluation:

The comprehension and usefulness of these graphics should be evaluated to choose the one which best conveys the message. The evaluation methodology should be determined and the interview forms should be developed. With the results of the evaluation, the graphic should be corrected before its distribution. This stage goes beyond the purpose of this project. The evaluation stage will be done as a field work in the future.

Through the application of the selected criteria to develop the Guatemalan dietary guidelines, we prove that these criteria are valid, useful and applicable to develop dietary guidelines. To confirm if these criteria are valid in other Central American countries, at this moment, the same criteria are being used to develop the Costa Rican dietary guidelines. Both process will analyzed and shared with the other countries of Central America. The following chapter presents a proposal to implement the dietary guidelines in Central American countries.

FIGURE No. 5 BASKET

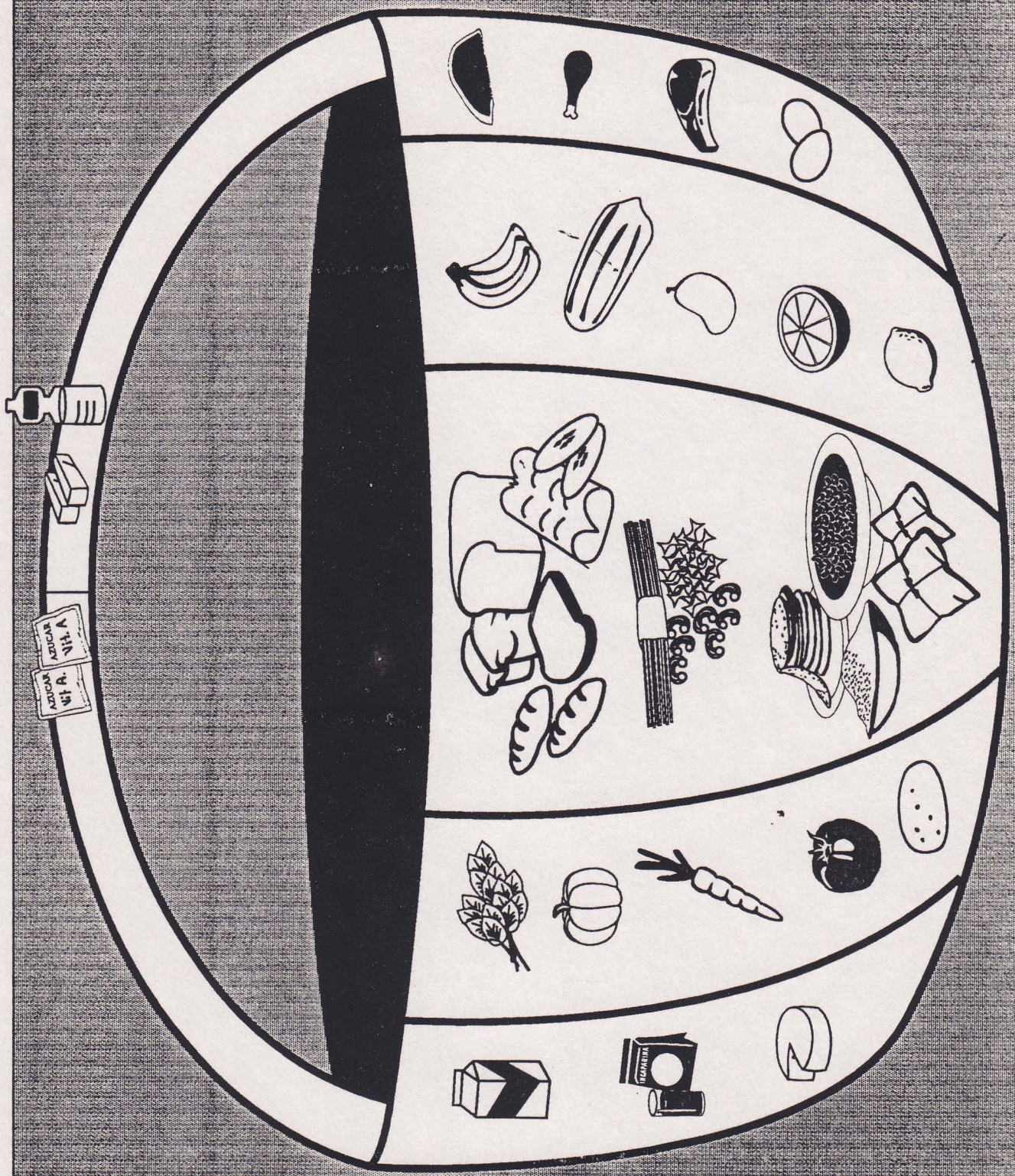


FIGURE No. 6 BOWL

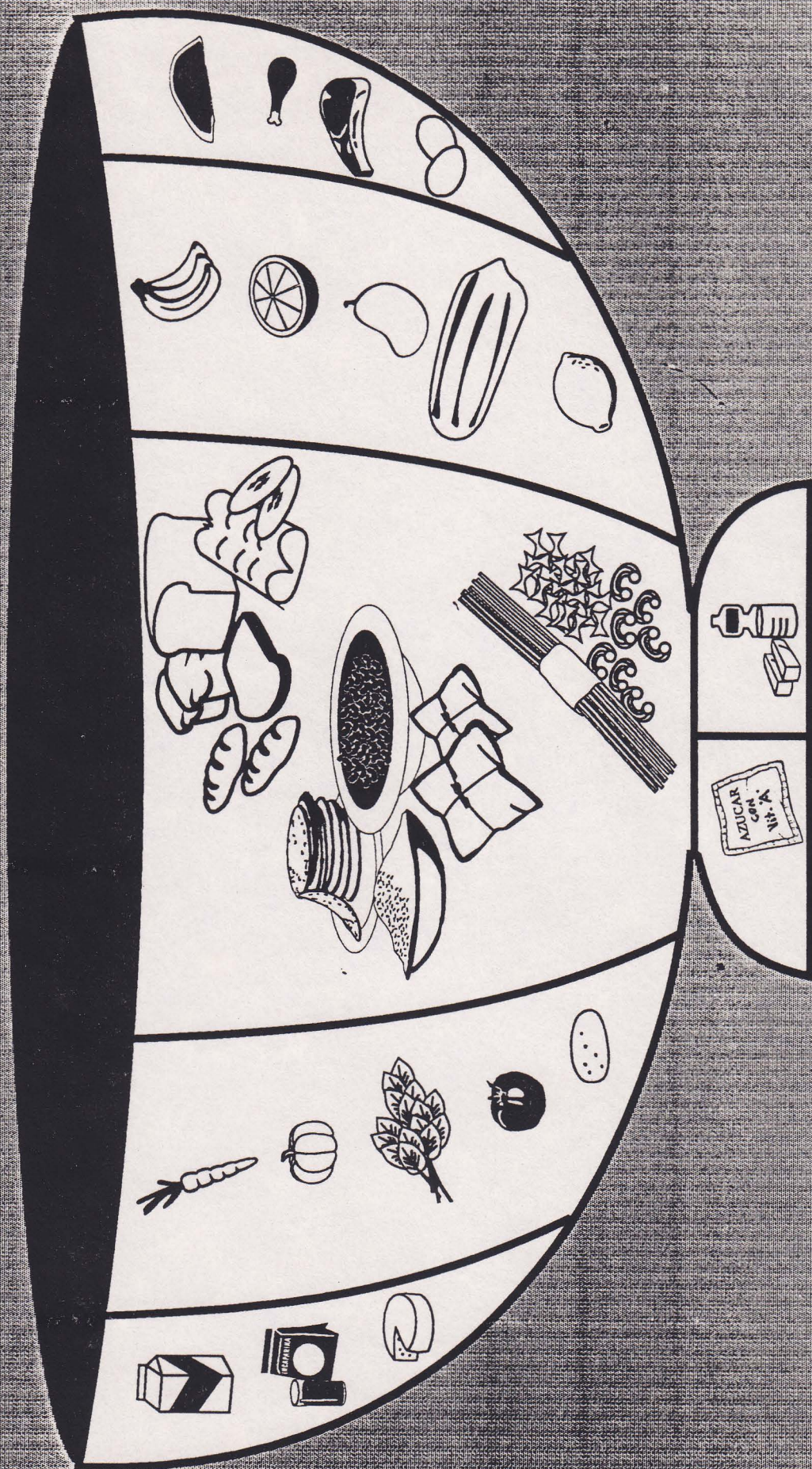
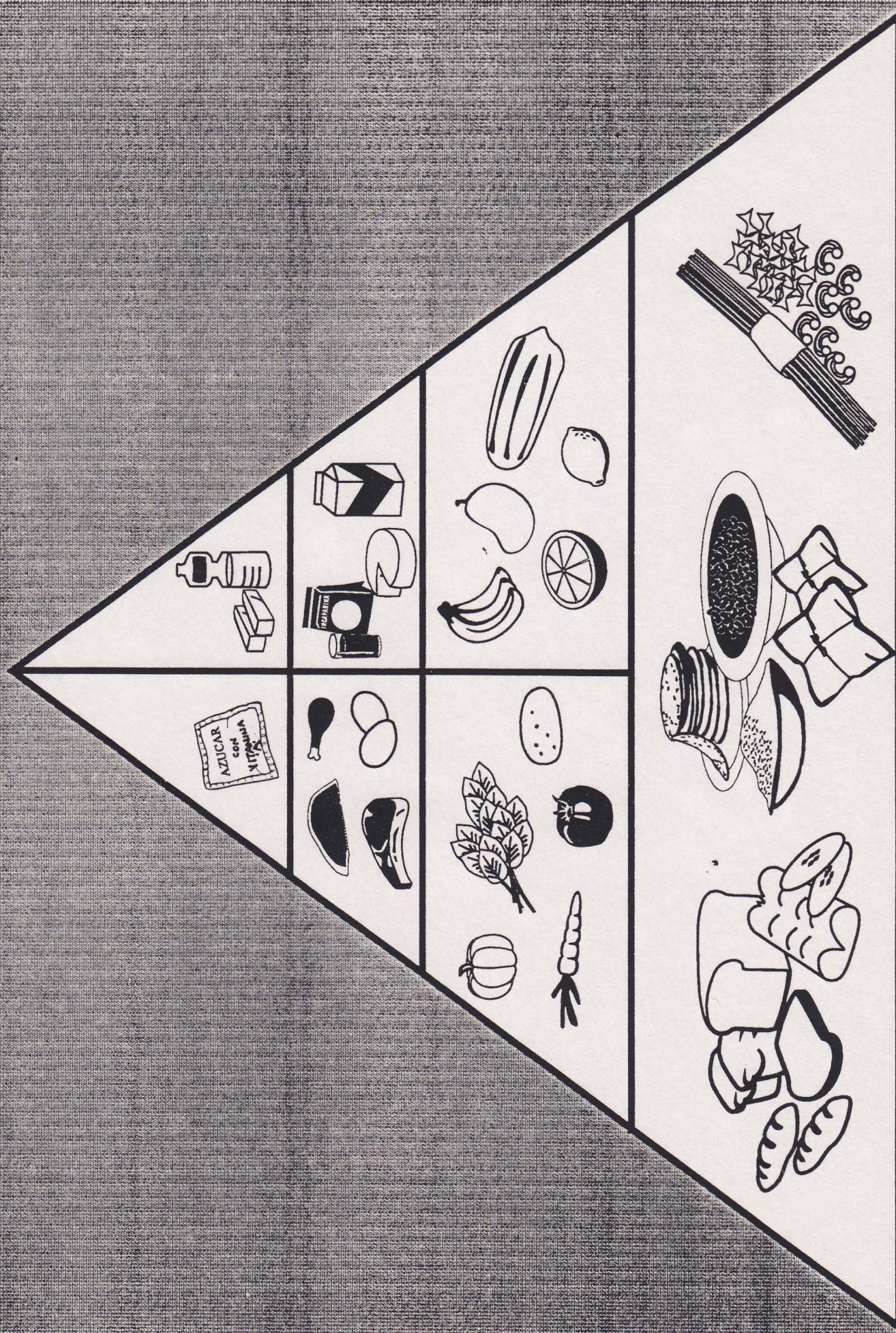


FIGURE NO. 7 PYRAMID



V. STRATEGIES TO IMPLEMENT DIETARY GUIDELINES

The first part of this chapter presents strategies suggested to implement dietary guidelines proposed by the Committee on Dietary Guidelines Implementation. The last part of this chapter offers specific recommendations to develop and implement dietary guidelines in Central American countries.

A. STRATEGIES TO IMPLEMENT DIETARY GUIDELINES IN THE UNITED STATES

Much has been written about how dietary guidelines have been and should be disseminated among the population. In the United States, in early 1988, an interdisciplinary Committee on Dietary Guidelines Implementation was appointed by the National Cancer Institute, National Institutes of Health, and the U.S. Department of Health and Human Services, to suggest better strategies to implement the Dietary Guidelines. The report of this committee was published as a book: "Improving America's Diet and Health. From Recommendations to Action" (Institute of Medicine 1991).

The challenge is how to motivate people to modify their dietary patterns and adopt healthy diets and healthy life-styles. The social sciences have shown that it is not enough to give only information intended to produce changes in behavior; to generate behavior changes, it is necessary to take an integral approach, to give individuals information, motivation, support and opportunities to make changes (Glanz & Damberg 1987). According to this, to obtain the incorporation of the dietary guidelines in the every day life of individuals, it's necessary to have the participation of different disciplines and different sectors; at least five "scenarios" could be identified that interact with each other to permit a successful adoption of the new concepts among the population.

The scenarios identified are:

- * Public Sector
- * Private Sector

* Education

- Health Professionals education
- Community education

1. Recommendations to Public Sector:

The recommendations to the public sector are focused on the power of the public sector to make changes through legislation and on their capacity to act as models, to the private sector and the community itself, implementing the recommendations in their own structures.

The public sector should act as a promotor and a coordinator of this effort. In the United States the actions taken differ state by state according to specific needs. The strategies proposed by the Committee to the public sector were:

Strategy 1: Improve federal efforts to implement dietary recommendations.

Strategy 2 : Alter programs that directly affect what American eat so as to encourage rather than impede the implementation of dietary recommendations. This effort should affect food assistance, food safety, and nutrition programs, as well as farm subsidy, tariff and trade programs.

Strategy 3: Change laws, regulations and agency practices that have an appreciable but indirect impact on consumer dietary choices so that they make more foods to support nutritionally desirable diets available. Examples are food grading and labeling laws and standards of identity for a number of food products.

Strategy 4: Enable government feeding facilities to serve as models to the private food services. and help people meet dietary recommendations.

Strategy 5: Develop a comprehensive research, monitoring, and evaluation plan to achieve a better understanding of the factors that motivate people to modify their eating habits and to monitor the progress toward implementation of dietary recommendations.

The New York Food and Nutrition Policy Council could be an example of the role of the Public sector in the implementation of Food and Dietary Policy. This council was

established in 1984 as a recommendation of the Nutrition Watch Committee. The council was a intersectorial committee with the Commissioner of Health as chair with the support of the Commissioners of Aging, Education, Social Services, Agriculture and Markets, General Services and the Council on Children and Families. The council had the mandate to develop a five-year plan for nutrition programs and services in New York State. The council had an Advisory Committee composed of: nutritionists, health planners, consumers, state legislative staff, elderly advocates, consumer educators, food retailers, food bank directors, food processors, farmers, social service providers, hunger/homeless advocates and nutrition advocates (Dodds, et. al. 1992).

The definition of the food and nutrition policy given by the Council was: "Food and nutrition policy is a complex array of educational, economic, technical, [and] legislative measures designed to reconcile projected food demand, forecast food supply, and meet nutritional requirements" (Dodds, et. al. 1992). The explicit mission of the council was to "Provide a forum for the coordination of the State health, agricultural, social service and education policies concerning nutrition and food in order to provide the people of New York State with adequate nutrition, culturally appropriate information, accessible services, and the ability to make informed nutrition decisions for themselves and their families (Dodds, et. al. 1992).

The council and the advisory committee recommended actions to be taken by four working groups on Accessibility, Health, Food production and Food distribution. They developed a preliminary report consisting of recommended actions in six goal areas and fifteen sub-areas. The plan was presented, discussed and approved in 1987. The same year, public hearings were conducted in different areas of the state to obtain feedback from the public, including citizens, food and nutrition professionals, industry and advocacy groups. Plans were included in the agencies' 1987-1988 programs of work and monitored by the advisory committee (Dodds, et. al. 1992).

The impressive work done was possible because of two strategies: Interagency collaboration, and public visibility. Successful elements in each category were:

Interagency Collaboration:

- Good working relationships among the designated agencies
- The plan is a policy document that establishes directions but does not initiate actions.
Each agency knew what to do but they defines how they would do it.
- Each recommended action named the agency or agencies responsible for taking the action.

Public Visibility:

- Involvement of the Governor's office was essential to advocate effectively for needed federal legislation.
- The careful selection of Advisory Committee members was time-consuming but decisive to the outcome.
- The constituency for the plan needed to be visible and grow over the time.
- The commitment to the Council and its plan varied among the state agencies.
- The plan called for the convening of an annual meeting of the state food and nutrition program directors (Dodds, et. al. 1992).

2. Recommendations to the Private Sector:

The private sector includes all the producers and food processors. The active participation of this sector is crucial to increase the availability of healthful food in the market and provide consumers with information on how improve their dietary patterns. As was described in the last section the private sector must be part of the national food and nutrition committee that defines the problem, develops the plan and the strategies for its implementation, and monitors and evaluates the process. The participation of the private sector in the Committee, allows: - -

Raises concern about health and nutrition issues, among this sector

- Gives them a forum to debate their opinions
- Facilitates the process of implementation of the recommendations

As an example, California, during 1988 the Fruit and Vegetable Industry, in cooperation with the California Department of Health Services and the California Department of Food and

Agriculture, began a 3-years campaign to promote the consumption of five servings of food and vegetables per person/day. This initiative named "5 a Day for a Better Health" was very successful in generating positive media coverage and encouraging the participation of supermarkets and other segments of food industry in promoting and implementing this campaign.(Institute of Medicine 1991).

The general recommendations given to this sector by the Committee were:

Strategy 1: Promote dietary recommendations and motivate consumers to use them in selecting and preparing foods and in developing healthful dietary patterns.

Strategy 2: Continue to increase the availability of a wide variety of appealing foods that help consumers to meet dietary recommendations.

Particular recommendations for the different segments of the food producer and industry were given; including: Producers of Fruit and vegetable, Grains and Legumes, Dairy, Meat, Poultry, Fish and Seafood, Eggs, Food Manufacturers and Processors, Food Retailers, Food Services Establishments (Institute of Medicine 1991).

The committee made a special recommendation to the business world regarding to work sites as an opportunity to implement comprehensive health promotion programs including : implementation of dietary guidelines in their cafeterias, educational campaigns and infrastructure to increase physical activity when possible (Institute of Medicine 1991).

A good example of implementation of nutrition a nutrition program at work site was cited by Black (1981), regarding the nutrition program implemented by Ciba-Geigy (England), modifying the menus served at the cafeteria for their 650 employees.

3. Recommendation to the Education Sector:

The Committee emphasizes the education recommendations at two levels: health-care professionals and the community, contemplating the former as education's agents to the latter.

a. Health-care Professionals Education:

Health professionals have been identified: Nutritionists, dietitians, nutrition educators, physicians, nurses, nurses assistants, health educators and other related fields as pharmacists, dentists and epidemiologist. They have multiple roles in the dietary guidelines implementation:

- * Educators: Providing patients with dietary assessments and counseling, as faculties in universities, training professionals from other sectors, serving as sources of information in health and nutrition.
- * Modeling role: Applying the recommendation to their own life-styles and to their families.
- * Organizers: promoting community programs and initiatives to improve nutrition
- * Advisors: To government and private agencies
- * Investigators: Generating new knowledge and understanding of the problems (Institute of Medicine 1991)

According to the literature, some weakness have been identified in teaching about human nutrition in medical curricula and it has been acknowledged that there is much room for improvement. To improve health professionals' capabilities in nutrition aspects it will be necessary to provide them with practical tools for office-based nutrition counseling, to provide continuing education for physicians and their office staff, and encouraging use of nutrition consultation by ancillary by health providers (Glanz & Damberg 1987, Guthrie 1987).

The recommendations made by the committee to this sector were in the same line to the recommendations given by Glanz:

Strategy 1: Raise the level of knowledge among all health-care professionals about food and nutrition and the relationships between diet and health.

Strategy 2: Contribute to efforts that will lead to health-promoting dietary changes for health-care professionals, their clients and the general population.

Strategy 3: Intensify research on the relationships between food, nutrition, and health and on the means to use this knowledge to promote the consumption of healthful diets.

In the research area, Rody (1988) presented evidence of the importance that health-care providers at local level develop their own operative research conducting to increase local health workers' understanding of local nutrition problems and aided them in planning appropriate interventions.

b. Community Education:

The challenge to nutrition education remains in two areas: designing effective interventions strategies, and conducting research to determine behavioral and health effects of the best available intervention. According to the literature, awareness of nutrition does not necessarily translate into positive behavior changes. Dietary changes depend on many factors, including consumers' knowledge, motivation, and ability (Dairy Council 1991, Byrd-Bredbenner, et. al. 1988). For these reasons, intervention strategies should include: education strategies and environmental strategies. Education strategies, involve providing information, motivation and behavior change techniques directly to individuals or groups. Environmental strategies encourage positive nutrition behavior by creating opportunities for action and removing barriers to following a healthy diet (Glanz & Damberg 1987, Black 1987).

There are different settings to nutrition education interventions, such as: formal, non-formal or informal education process:

- * Formal Education: When it happened as part of a school curricula
- * Non-Formal Education: When it occurred out-side of the school system, but in a structured way (i.e. Adult training, education activities at community centers, others)
- * Informal Education: The every-day life learning experience (i.e. Reading newspapers, watching T.V., doing hobbies, etc)

In this scenario, education strategies include a broad audience in each setting, and specific interventions with specific messages and channels for each target group. (Dodds, et. al. 1992, Gillespie 1985). The strategies recommended by The Committee, embrace the different educational settings.

The Committee made the following recommendations for community education:

Strategy 1: Ensure that consistent educational messages about dietary recommendations reach the public.

Strategy 2: Incorporate principles, concepts, and skills training that support dietary recommendations into all level of schooling -Kindergarten through college.

Strategy 3: Ensure that children in child-care programs (including out-of-home care programs and family groups or center-based programs) receive nutritious meals served in an environment that takes account of the importance of food in children's physical and emotional well-being.

Strategy 4: Enhance consumers' knowledge and the skills they need to meet dietary recommendations through appropriate food selection and preparation.

Strategy 5: Establish systems for designing, implementing, and maintaining community-based interventions to improve dietary patterns.

Strategy 6 : Enlist the mass media to help decrease consumer confusion and increase the knowledge and skills that will motivate and equip consumers to make health-promoting dietary choices.

To finish this section it is important to mention that Berger (1987) has identified the following major obstacles to practical implementation of the Dietary Guidelines:

- a. Individual variation of the population in nutritional requirements
- b. Determinants of food choice and eating behavior
- c. The complex factors influencing food supply and
- d. Lack of coordination between different sectors using Dietary Guidelines

These recommendations should be taken into account in the implementation of Dietary Guidelines. The following section describes the application of the main findings of this report to develop and to implement Central American Dietary Guidelines.

B. RECOMMENDATIONS TO DEVELOP AND IMPLEMENT CENTRAL AMERICAN DIETARY GUIDELINES

This section presents my suggestions to develop and implement dietary guidelines in Central American countries. These suggestions are based on: the findings of this report, my understanding of the Central American context, and the work done in Guatemala and Costa Rica during the summer, regarding to dietary guidelines development.

The development of the Central American Dietary Guidelines started with the development of the Guatemalan Dietary Guidelines and the graphic design. The Guatemalan experience should be used as an example to develop the Dietary Guidelines for the other Central American Countries.

1. Initial Stage:

* The first stage of this effort started during my visit to INCAP in the summer of 1994, when I developed the first version of the Guatemalan Dietary Guidelines and the graphic design, presented on chapter II of this report.

* This first version is been reviewed by the INCAP Committee on Dietary Guidelines. The committee is formed by INCAP's professionals with different expertise, such as: Food sciences, nutrition, medicine, education and communication. The feedback of this committee will allow improve the Guatemalan Dietary Guidelines.

* The Guatemalan Dietary Guidelines, will become the framework to develop national dietary guidelines and the graphic design in each Central American country. During my work at INCAP in the summer of 1994, I had the opportunity to travel to Costa Rica, to help them to organize the process of the development of their dietary guidelines. At the present, Costa Rica is using the Guatemalan model to develop their own guidelines.

2. Future Activities:

* The next step should be the selection of an Guatemalan Advisory Committee, to review the dietary guidelines and the graphic design submitted by INCAP. The members of this advisory committee might have scientific knowledge to review the guidelines as well as socio-political acknowledge, to act as leaders promoting the dietary guidelines in their own countries. Members could be, among others, directors of schools of nutrition, presidents of nutrition association, directors of research institutions, outstanding professionals.

* Once the guidelines and the graphic design have been approved, by the Guatemalan Advisory Committee, public hearings should be conducted in different regions of the country, to obtain input from the public, including citizens, food and nutrition professionals, health related professionals, industry and advocacy groups. This strategy has two purposes to get feedback and to arouse awareness among the population.

* The establishment of National Executive Committee should be the next stage. On this committee the persons who were part of the Guatemalan Advisory Committee should be the coordinators. The National Executive Committee should insuring involvement of necessary people and interest areas, such as: food and nutrition related professionals, social scientists, health professionals, universities, education sector, agriculture sector, industry, food producers and advocacy groups. The purpose of this committee will be:

- * To review and adapt dietary guidelines and the graphic design according to public hearings
- * To field testing the dietary guidelines and the graphic design and make the adaptations
- * to develop the national plan to implement the dietary guidelines in the country. The national plan should include the following aspects:

- National goals
- Objectives
- Program strategies for each goal
- Activities suggested for each strategy
- National agency responsible of each action

- Timetable

Formation of working groups in different areas, such as: Nutrition and health, Agriculture and distribution, Legislation, Education and promotion, could facilitate the development and monitoring of the National Implementation Plan. In this stage, the recommendations given by USA Committee on Dietary Guidelines Implementation, (reviewed in the first section of this chapter), should be taking as the starting point, adapting them to the Central American context.

* Considering the expertise, scientific knowledge and resources, INCAP should be the coordinator of this effort. In order to provide technical assistance, INCAP's professionals, from its headquarters and the GTB's in the countries, should be part of all the Committees.

The following diagram presents the different committees, its members and outputs expected in each committee:

GUATEMALAN DIETARY GUIDELINES: DEVELOPMENT AND IMPLEMENTATION

MEMBERS		EXPECTED OUTPUTS
Selected INCAP staff	INCAP COMMITTEE	Guatemalan Dietary Guidelines with graphic design (first version)
School of Nutrition directors Presidents of Nutrition Assoc. Directors of Research Institutions Outstanding professionals INCAP staff	GUATEMALAN ADVISORY COMMITTEE	Review first version of Guatemalan Dietary Guidelines & graphic feedback. (Second version)
Community	PUBLIC HEARINGS IN DIFFERENT REGIONS OF GUATEMALA	Get community feedback Arouse community awareness
Health sector Agriculture Education Planning Universities Food Industries Food Producers Advocacy Groups INCAP staff	NATIONAL EXECUTIVE COMMITTEE	Review and adapt Dietary Guidelines & graphic design, according to national hearings. Field Testing of the Dietary Guidelines & graphic design Develop Dietary Guidelines and graphic design implementation.

One member of the School of nutrition and of the Nutrition Association, from each Central American country, should be invited to accompany Guatemalan experience during the key momentums, with two purposes: get their feedback and facilitate the introduction of these process in their own countries. The development of the guidelines in the other countries should be a simultaneous process, they don't have to wait until the Guatemalan Guidelines should be completed. As an example that it could be possible, we can say that at this moment, a Costa Rican Committee, is developing the National Dietary Guidelines, using the Guatemalan experience, as a model.

On the other hand we are planning a Central American workshop to discuss relevant issues on Dietary Guidelines development and implementation, with the participation of U.S.A. experts from the USDA and from Tufts University, who developed American Guidelines. This workshop will be held in the first semester of 1995, sponsor by the Pan American Health Organization and INCAP. A proposal to develop this workshop is presented in the Annex.

VI. NON-FORMAL EDUCATION IMPLICATIONS OF THE DIETARY GUIDELINES IMPLEMENTATION AT THE LOCAL LEVEL

In the last chapters we reviewed the theoretical basis to develop dietary guidelines, and the application of this theory to the Guatemalan context. We also reviewed the recommendations to implement the dietary guidelines in the United States and the adaptation of this suggestions to Central American context. I would like to finish this master project, with an example on how to implement and adapt the dietary guidelines at the local level, using non-formal education strategies.

My first recommendation is that at the local level, all the private and national organizations working in nutrition related activities, will use the Dietary Guidelines as a basis to develop their nutrition education programs. However they should adapt the concepts presented in the dietary guidelines to their local context. The dietary guidelines will serve to standardize the nutrition information among the organizations. It means that the community will receive the same messages form the different institutions, and from different points of view (health, agriculture, home economics, etc.).

The steps suggested to adapt the dietary guidelines to the local context are:

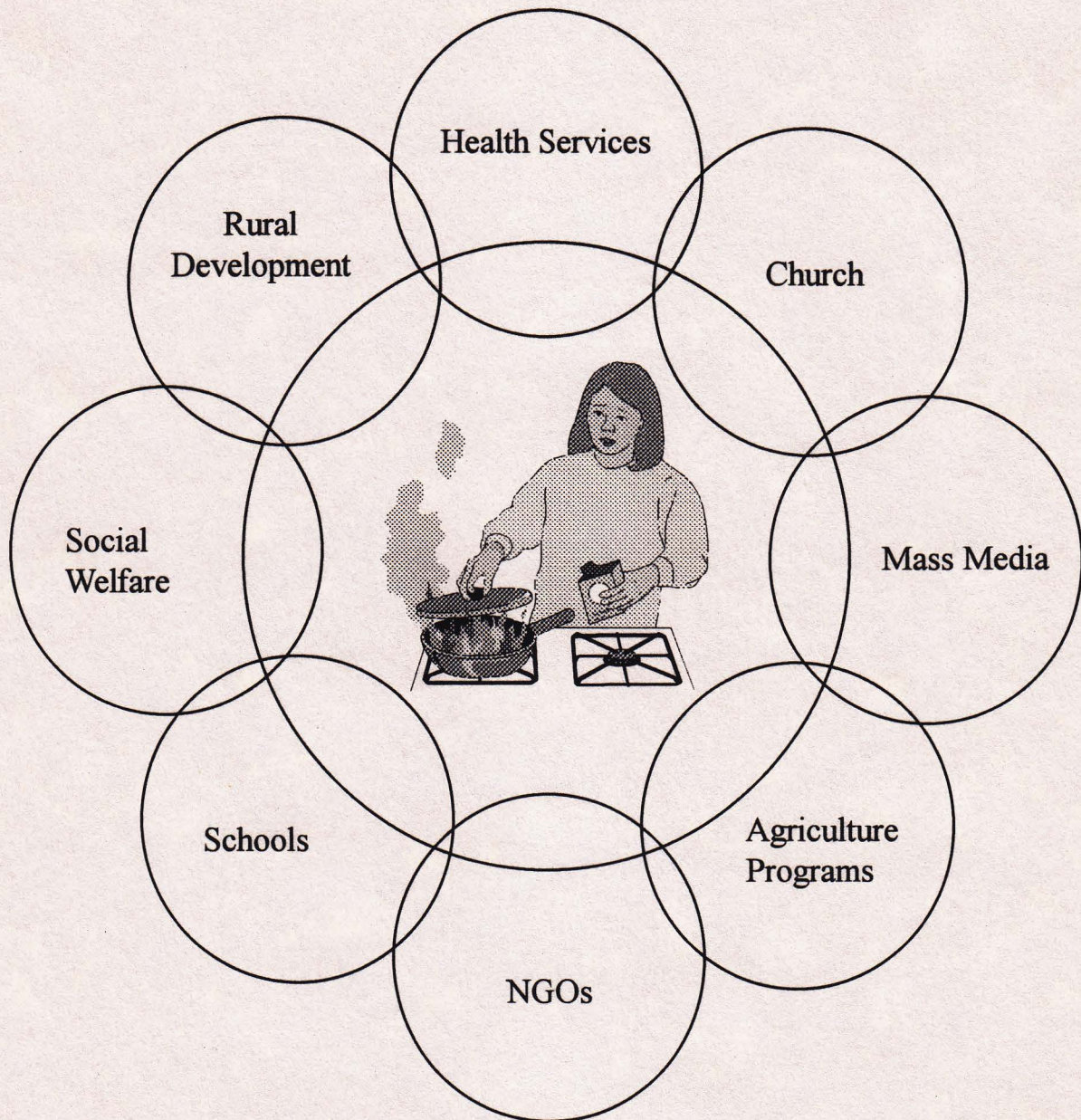
A. IDENTIFY THE TARGET AUDIENCE:

The first step is to identify the target audience. The target audience will be the clientele who the institution serve. For the purpose of this example I would like to choose mothers as the target audience, because mothers are the ones who generally decide, what food to buy, how to prepare it, and how to distribute it among the family members.

B. IDENTIFY THE SOURCES OF INFORMATION WHICH REACH THE TARGET AUDIENCE:

At the community level mothers can be affected by different sources of information such as: health services, agriculture programs, church, mass media, NGO's programs, school, rural development programs, social welfare, and others. Each one of these sources of information should use the same process to adapt the dietary guidelines to their own programs. Figure No. 9

FIGURE No.9
Sources of Information for Target Audience



shows the relation of the different organizations with the target audience. I used concentric circles to show that there are points of coincidence among different organization's programs. For this reason, it is very important, that all these organizations use the same nutritional information, to reinforce the message and to avoid confusion among the target population. This is the role of the dietary guidelines: standardize the nutrition messages to be disseminate among the target population.

For the purpose of this exercise, I choose as the source of information, a nutrition education program developed by a NGO.

C. FIND-OUT THE INFORMATION NEEDED TO ADAPT THE DIETARY GUIDELINES:

To adapt the dietary guidelines the practitioners of the NGO should follow information in the organization regarding specific contextual issues about the community, such as: language, ethnic groups, religion, socio-economic information, politic information, health and nutrition status, literacy rate, etc. Additionally, the practitioners should collect some specific information regarding food habits, in four areas:

- * Food meaning in the community
- * Food acquisition
- * Food preparation
- * Food distribution

Some of the questions that the practitioner should ask to the mothers, related to these four areas, are:



- * What types of food do you like to eat?
- * What do you usually eat?
- * What do you avoid to eat? Why?
- * Who buys the food?
- * How do you decide which food to buy?

- * How do you combine different foods? Why
- * How do you prepare different foods? Examples
- * How do you cook your food?
- * Who prepares the food?
- * Who distributes the food among the family members?
- * Who eats first?
- * Who decide how much food to give to each family member?
- * How do you classify the foods?
- * Are there healthy foods? Ask for specific examples
- * Are there unhealthy foods? Ask for specific examples
- * Why are unhealthy?
- * How do you name the foods?
- * How do you group the foods?
- * Are there special foods for different ages or physiological stages? Ask for specific examples
- * Are there bad foods for different ages or physiological stages? Ask for specific examples

With the answer to this questions, practitioners can adapt the dietary guidelines to the local context, developing more specific messages, using the proper names for the foods, giving specific examples of recipes, giving specific advice about foods need at different ages or physiological stages. At the same time they can develop more appropriate educational material, using local foods.

D. DATA GATHERING TECHNIQUES:

To collect all this information, the mothers from the community will be the informants. The techniques used should be focus on a group instead of the individual. Because, using group techniques to enrich participation of the group will allow for much information from the mothers to be expressed at the same time. I have developed two specific techniques to gather this information, (Food cards and Family cards) and I adapted two other techniques (Focus group

interviews and Chain of balloons). These techniques are explained below, as an example for practitioners, but practitioners are encouraged to use other techniques familiar to them as well.

1. Focus Group Interview:

Purpose: To get information from the mothers, about what food means to them, how do they buy, prepare and distribute food in their families.

Time: one-half - two hours

Resources: 6-10 mothers from the community
 1 facilitator trained in focus group interview
 1 recorder trained in focus group interview
 1 cassette recorder and blank cassettes
 interview guide (Questions presented in last section)

Procedures:

Facilitator:

- * Begins the meeting setting a friendly, open and trustful climate
- * Introduce him / herself and explains his / her role, as well as, the recorder role
- * Ask the mother's first name. It is important to learn them quickly to use them when talk to the mothers. (Or give them name tags)
- * Explains the purpose of the meeting is to gather opinion and ideas from the mothers about foods, to use their knowledge and experience in the educational program of the NGO.
- * Explains that all the opinions are important, and that there are no good or bad answers
- * Starts the meeting with general questions like number of children, what kinds of work mother do at home, or other ice breaker that allows everybody to talk.
- * Start asking the questions from the interview guide discussion (presented in last section), one by one, facilitating participation from all group members, until enough information is gathered.
- * When the meeting is over, thank the mothers for their participation and reaffirm how

valuable and useful the participation of everyone of them has been. Refreshments can be offered.

Recorder:

- * His / her role is to take notes about the discussion and on the process.
- * Help the facilitator by pointing out missing questions, resolving conflicts or calling the facilitator's attention when a mother wants to participate and can't.
- * Handle the cassette recorder and change cassette when needed.

After the meeting, the facilitator and the recorder should review the notes taken by the latter and complete them. These notes added to the transcription from the cassette recorder, gives a complete information of the session process and the discussion (Scrimshaw & Hurtado, 1987).

Using this technique, practitioners can gather important information regarding language local expressions, which is useful to develop educational material. Another advantage of this technique is that the facilitator can ask for more detailed information when it is needed.

2. Chain of Balloons

Purpose: The purpose of this technique is to gather information regarding how mothers decide what kind of food to buy. These technique also, involve participants in an analysis of the chain of factors affecting any decision they take.

Duration: one to one-half hours.

Resources: 6-10 mothers from the community

1 facilitator

Newsprint

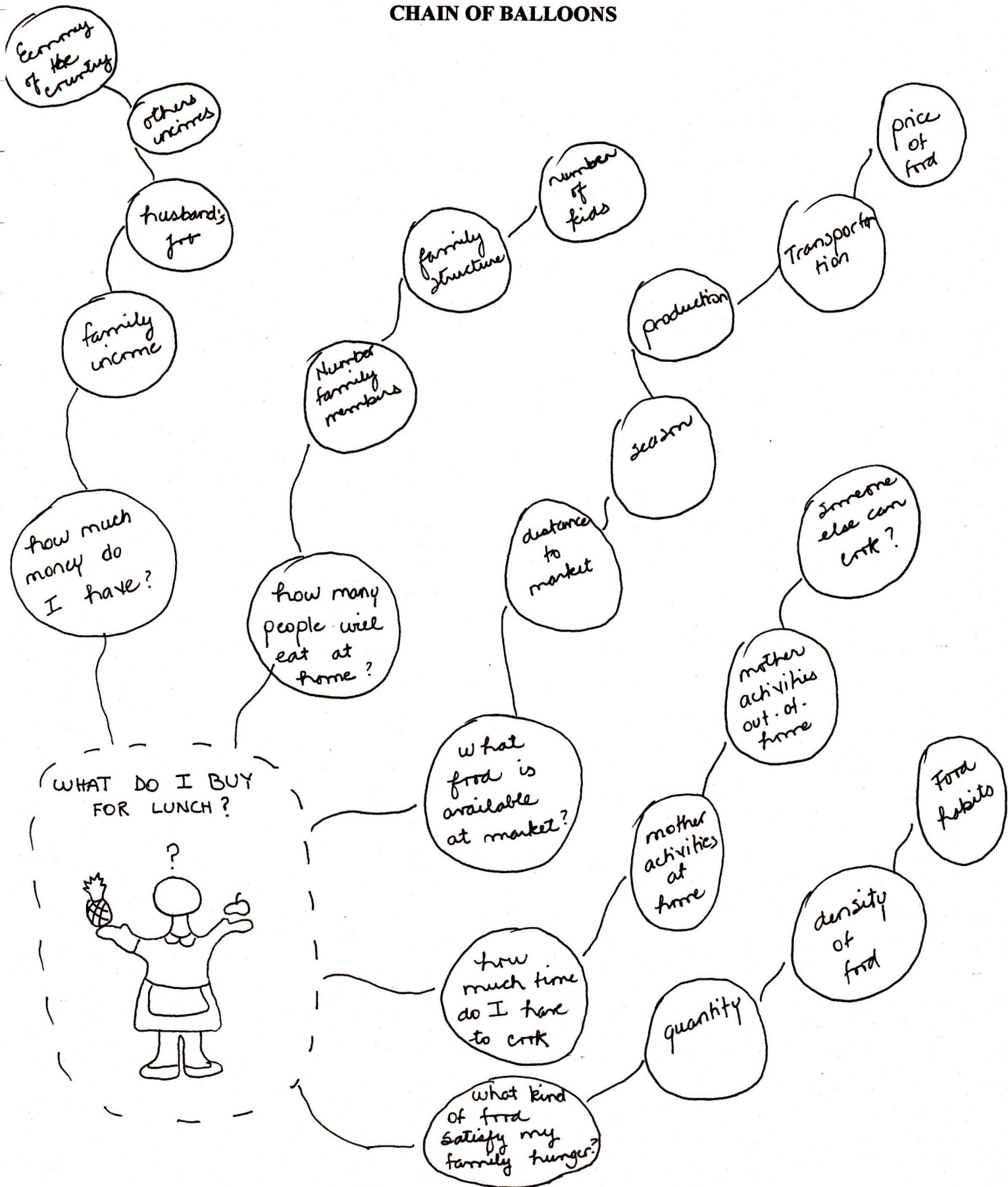
Markers

Procedure:

- * Give the mothers a set of markers and newsprint
- * Ask them to start drawing or pasting a picture of a village woman in the lower left-

FIGURE No. 10

CHAIN OF BALLOONS



hand corner. Close to the picture they should write the question "What food will I buy for my family's lunch today?". Close to the question they should draw a balloon in which they should note down one major factor they take into account before going to buy the food for their family.

- * They should then reflect on one or more causes of this factor. For each cause they draw a balloon and link it to the first, indicating that it is a cause of the first consideration. They should continue drawing and linking other balloons representing the causes of those causes.

- * When a whole chain of balloons has been created in this way they should reflect on how and where the chain of negative causes can be broken (Srinivasan, 1993)

This activity can be very useful to understand the decision-making process that the mothers follow to decide what food to buy, so that they can develop appropriate strategies to solve these problems, as well as to develop appropriate educational interventions, and educational material.

This technique also serves as a needs assessment evaluation. The results can also be used in a summative evaluation, doing the same dynamic after the intervention, to assess the impact of the intervention on the decision-making process.

When mothers are illiterate, they can draw the balloons and the facilitator can write their suggestions. Figure No. 10 shows an example of this activity.

3. Foods Cards:

Purpose: To gather information about foods habits and, about how mothers group and combine foods. It also helps us better understand their food beliefs.

Time: One to one-half hour

Resources: 10 mothers from the community

1 facilitator

1 recorder

A set of cards with drawings of food available in the community

Procedure:

- * Present each card to the group, making sure that they recognize the pictures
- * Ask them to choose the cards of the foods they usually consume for each meal (breakfast, lunch, dinner, snacks). When the mothers reach a consensus on the foods, start asking them why they choose this foods and no others.
- * Then ask them to choose which cards represent bad/good food. When they reach a consensus, ask them why these foods are good or bad.
- * Using the same cards, ask the mothers to divide the different cards in 4-6 groups, putting together the foods they think are similar. When they reach consensus, ask why these foods are similar. If the foods groups are very different, from the groups suggested in the dietary guidelines, group the foods in the way suggested in the dietary guidelines, and ask the mothers their opinion about these groups.
- * These cards can be used asking the questions presented in section 3, data gathering needed to adapt the dietary guidelines.

The role of the facilitator is to guide the discussion and encourage participation from all the participants. The role of the recorder is to register the mother's answers, and help the facilitator when needed.

This technique will give the practitioners practical information to adapt the messages of the dietary guidelines to their community.

4. Family Cards:

Purpose: To gather information about food used for different ages and physiological stages, as well as, how mothers distribute foods among family members.

Time: One hour

Resources: 10 mothers from the community

1 facilitator

1 recorder

A set of cards with drawings of food available in the community

A set of cards with drawings of different members of a family

Procedure:

- * Introduce each card to be sure that the mothers can identify the different family members
- * If they want to introduce another member, be prepared with other cards of a woman, a man, a child and an elder person.
- * Then introduce the foods cards. Choose one of the family member cards, starting with those with nutritional problems, (child, pregnant women, or elders). Ask them to match the card person with the appropriate food cards for this specific age. Always ask the reasons for these selections. The game can continue until all the family members are covered.
- * Then use the family members cards to ask the mothers, the order in which they distribute the food among their families.

The role of the facilitator is to guide the discussion and encourage participation from all the participants, the role of the recorder is to register the mother's answers, and help the facilitator when needed.

This exercise will give important information to the practitioners regarding the meaning of the food for different ages and physiological stages, and how the mother distribute the food.

E. ADAPTING THE DIETARY GUIDELINES:

Once the practitioners have collected the information, they should start the process of adaptation of the dietary guidelines, including specific information, using local names of the foods, developing specific messages for people at risk in the community, and developing educational material adapted to the local context.

For example, instead of just say " Eat a variety of food available", they can add specific examples of the variety of food available at the community. Instead of saying "Every day eat dark yellow or green vegetables and leaves. " They can say "Eat every day _____, _____ and _____. Filling the blanks with vegetables and

fruits, available at the community, which are sources of Vitamin A.

They also can adapt the graphic design of the food guidelines, drawing appropriate foods in each group. Additionally, also can develop specific strategies to solve the problems identified through the different activities listed above.

VII. CONCLUSIONS

My main conclusions after finishing this master project are:

- * The bibliographic review gave me elements to develop a framework to produce a model of dietary guidelines for Central American countries.
- * This theoretical framework was useful and can be applied to other Central American countries. I applied the model to the Guatemalan context. Costa Rica is using it to develop their own dietary guidelines. Both experiences should be reviewed to improve the framework before its dissemination.
- * Many countries around the world have developed their own dietary guidelines, as a educational tool to promote healthy diets and lifestyles.
- * The role of the dietary guidelines is to standardize the nutrition messages to the general population, but should be adapted to the specific characteristics of the local context
- * Field testing is needed to assess how different populations interpret the graphic designs of the dietary guidelines. A team of educators, communicators and sociologists, should develop the methodology to pretest the dietary guidelines and the graphic design.
- * The techniques suggested to implement and adapt the dietary guidelines to the local context, might be used to field testing the dietary guidelines
- * The role of the nutritionists in the development and implementation of dietary guidelines, in Central American countries will be crucial. It is imperative that they participate in the whole process, beginning with the planning stage.
- * The workshop to develop and implement dietary guidelines in Central American countries (see Annex), ideally will define the role that each sector of the country team, plays in both the development and the implementation process of the dietary guidelines.
- * Dietary guidelines should be used to teach basic nutrition. In the formal education system, from preschool to high school, as well as at the university level adapting the content to the audience. Dietary guidelines also should give the framework to develop non-formal nutrition education programs. To train both the practitioners and the villagers, always adapting the material to the audience.

VII. BIBLIOGRAPHY

Axelson, Martha L., Natalie Kurinij and David Brinberg. An analysis of the four food groups using multidimensional scaling. *Journal of Nutrition Education* 18(6):265-273, 1986.

Bajaj, Satinder. The food fair . A reader in nutrition. Voluntary Health Association of India. India, 1990. p 14-15.

Bell Associates Incorporated. And Evaluation of Dietary Guidance Graphic Alternatives. Executive summary. Cambridge Massachusetts, 1992[a]. 23p.

Bell Associates Incorporated. Dietary guidance graphic alternatives. Final report. Bell Associates Incorporated, Cambridge Massachusetts, 1992[b]. 139 p. (Plus appendices).

Berger, Stanislaw. The implmentation of dietary guidelines-ways and difficulties. *American Journal of Clinical Nutrition* 45:1383-1389, 1987.

Black, Alison E. Translation of dietary recommendations into food selection: a dietitian's point of view. *American Journal of Clinical Nutrition* 45:1399-1406, 1987.

Block, Gladys. Dietary guidelines and the results of food consumption surveys. *American Journal of Clinical Nutrition* 53:356s-357s, 1991.

Bruce, Ake P.E. The implementation of dietary guidelines. *American Journal of Clinical Nutiriton* 45:1378-1382, 1987.

Byrd-Bredbenner, Carol, Rose Martin, Christine J. Lewis and Barbara Shannon. The effectiveness of two methods of delivering nutrition information to the general public. *Journal of Nutrition Education* 20(2):63-69, 1988.

Caribbean Food and Nutrition Institute (CFNI) and Ministry of Health, Jamaica. Nutrition handbook for community workers. CFNI, Pan American Health Organization. Jamaica, 1985. p 5.5-5.9.

Centro de Estudios sobre Nutricion Infantil (CESNI) . Para que los chicos crezcan mejor. Manual para el promotor. CESNI, UNICEF, Cooperazione Italiana. Argentina, 1985. p 2.

Chavez, Miriam, Herlinda Madrigal, Adolfo Chaves y Enrique Rios. Guías de alimentacion de Mexico. Instituto Nacional de Nutricion, Organizacion Panamericana de la Salud, Organizacion Mundial de la Salud. Mexico, 1993. 58p.

- Cleveland, Linda E. and Richard L. Kerr. Development and uses of the USDA food plans. *Journal of Nutrition Education* 20(5):232-238, 1988.
- Cronin, Frances J., Anne M. Shaw, Susan M. Krebs-Smith, Patricia M. Marsland, and Luise Light. Developing a food guidance system to implement the dietary guidelines. *Journal of Nutrition Education* 19(6):281-302, 1987.
- Deleeuw, Eileen Richards, Carol T. Windham, Georgia C. Lauritzen and Bonita W. Wise. Developing menus to meet current dietary recommendations: implications and applications. *Journal of Nutrition Education* 24(3):136-143, 1992.
- Delgado, Hernan L. Papel critico de la nutricion en el contexto de la salud y el desarrollo. Instituto de Nutricion de Centro America y Panama. Guatemala, 1993. 26p.
- Dodds, Janice M. The handy five food guide. *Journal of Nutrition Education* 13(2):50-52, 1981.
- Dodds, Janice M., Sandra Rhoades, Linda Barr Gale and Linda Randolph. The New York state food and nutrition policy council: experience in interagency coordination. *Journal of Nutrition Education* 24(2):201-206, 1992.
- Dos-Santos, Agbessi H. and M. Damon. Manuel de nutrition Africaine. Tome I: Elements de base appliques. Institut Panafricain pour le Developpment. Douala, 1987. p 20-21.
- Egg Nutrition Center. Update on dietary guidelines for healthy populations. *Nutrition Close-Up* 7(1):1-3, 1990.
- Fischer, Magda, Hernan Delgado and Veronika M. de Palma. Institute of Nutrition of Central America and Panama - INCAP-. INCAP Publication V-76. Guatemala, no date. 31p. (Promotional booklet)
- Food and Nutrition Board. "Recommended dietary allowances: scientific issues and process for the future. *Journal of Nutrition Education* 18(2):82-87, 1986.
- Gillespie, Ardyth H. A conceptual framework for developing a dietary guidance system. *Journal of Nutrition Education* 17(4):139-142, 1985.
- Gillespie, Ardyth H. A survey of nutritionists' opinions on objectives of a dietary guidance system. *Journal of Nutrition Education* 19(5):220-224, 1987.
- Glanz, Karen and Cheryl L. Damberg. Meeting our nation's health objectives in nutrition. *Journal of Nutrition Education* 19(5):211-219, 1987.

Guthrie, Helen A. and James C. Scheer. Nutritional adequacy of self-selected diets that satisfy the four food group guide. *Journal of Nutrition Education* 13(2):46-49, 1981.

Guthrie, Helen A. Principles and issues in translating dietary recommendations to food selection: A nutrition educator's point of view. *American Journal of Clinical Nutrition* 45:1394-1398, 1987.

Haughton, Betsy, Joan Dye Gussow and Janice M. Dodds. An historical study of the underlying assumptions for United States food guides from 1917 through the Basic Four group guide. *Journal of Nutrition Education* 19(4):169-176, 1987.

Hertzler, Ann A and Helen L. Anderson. Food guides in the United States. *Journal of The American Dietetic Association* 64:19-28, 1974.

Hundall, Marsha and Nancy S. Wellman. Missing the nutrition message of balance, variety and moderation. *Journal of Nutrition Education* 24(6):320-322, 1992.

International Conference on the Diets of the Mediterranean. Optimal traditional Mediterranean diet. Preliminary concept. International Conference on the Diets of the Mediterranean, 1993. (Leaflet).

Instituto de Formacion y Capacitacion Popular (INFOCAP). Salud y nutricion. Manual para monitoras de grupos de salud. INFOCAP. Chile, 1986. p 42-43.

Instituto de Nutricion de Centro America y Panama (INCAP). Situacion alimentaria-nutricional y de salud de Centro America. INCAP publicacion ME/003. Guatemala, 1992. 82p.

Instituto de Nutricion de Centro America y Panama. *Valor Nutritivo de los Alimentos para Centro America y Panama*. INCAP, Guatemala, 1971. 18 p.

Instituto Nacional de Nutricion, Fundacion Cavendes. Guias de alimentacion para Venezuela. Instituto Nacional de Nutricion, Fundacion Cavendes. Venezuela, 1990. 88p.

Institute of Medicine. Improving America's diet and health. Form recommendations to action. A report of the Committee on Dietary Guidelines Implementation. Food And Nutrition Board Institute of Medicine, 1991. 239 p.

Lachance, Paul A. A suggestion on food guides and dietary guidelines. *Journal of Nutrition Education* 13(2):56, 1981.

Land O'Lakes Foods. The new recommended dietary allowances: What's changed?. *Consumer Quarterly* 8(2), Spring 1990.

Laure, Joseph et. al. *Elementos para el Calculo de los Salarios Minimos en Guatemala*. Ministerio de Trabajo y Prevision Social, Secretaria General del Consejo Nacional de Planificacion Economica de Guatemala, Instituto de Nutricion de Centro America y Panama, Institu Francais de Rescherche Scientifique pour le Developpment en Cooperation. Guatemala, 1994. 70 p.

Light, Louise and Frances J. Cronin. Food guidance revisited. *Journal of Nutrition Education* 13(2):57-62, 1981.

Murray, T. Keith. Diet and health: the Canadian experience. *American Journal of Clinical Nutrition* 45:1390-1393, 1987.

National Dairy Council. Consumer knowledge and attitudes about diet and nutrition. *Dairy Council Digest* 62(4), July-August 1991.

Nutrition Education Research Advisory Committee. Nutrition education research: announcement of a grant program. *Journal of Nutrition Education* 19(6):268-272, 1987.

Nestle, Marion. The surgeon general report on nutrition and health: New federal dietary guidelines policy. *Journal of Nutrition Education* 20(5):252-254, 1988.

Newman, Vicky and Diana Lee. Developing a daily food guide for women. *Journal of Nutrition Education* 23(2):76-82, 1991.

Pennington, Jean A. T. Considerations for a new food guide". *Journal of Nutrition Education* 13(2):53-55, 1981.

Peterkin, Betty B. Dietary guidelines, second edition. *Journal of Nutrition Education* 17(5):188-190, 1985.

Peterkin, Betty B. What's new about the 1990 dietary guidelines for Americans?. *Journal of Nutrition Education* 23(4):184-186, 1990.

Pyramid Power. *Nutrition Letter* 2(7):11-12, September-October 1991.

Rody, Nancy. Empowerment as organizational policy in nutrition intervention programs: A case study from the Pacific Islands. *Journal of Nutrition Education* 20(3):133-141, 1988.

Scrimshaw Susan and Elena Hurtado. *Rapid Assessmtent Procedures for Nutrition an Primary Health Care*. The United Nations University. University of California, Los Angeles, 1987. p 15-19.

Srinivasan, Lyra. *Tools for Community Participation*. A Manual for Training Trainers in Participatory Techniques. PROWESS/UNDP Technical Series Involving Women in water And Sanitation. Washington, 1993. p137-138

Secretaría General de Planificación Económica (SEGEPLAN), Comité de Acción de Apoyo al Desarrollo Económico y Social de Centroamérica (CADESCA), Instituto Nacional de Estadística (INE). *Encuesta Nacional de Consumo Aparente de Alimentos 1991*. SEGEPLAN, CADESCA, INE, Guatemala, 1993. 63 p.

South Pacific Community Nutrition Training Project. Foods needs for family members. South Pacific Community Nutrition Training Project. Suva-Fiji, 1988. p 12-13.

Steele, Sara M. Cooperative extension's use of dietary guidelines and your diet and suggestions about revisions. University of Wisconsin-Madison, Department of Continuing and Vocational Education, 1990. 37p.

Stephenson, Marilyn G. The 1990 national objectives for improved nutrition. *Journal of Nutrition Education* 19(4):155-158, 1987.

Benjamiin Torun, Maria Teresa Menchu y Luiz G. Elias. *Recomendaciones Dietéticas del INCAP*. Instituto de Nutrición de Centro América y Panamá. INCAP, Guatemala, edición 1994. 64 p. (Version preliminar)

Universidad de las Naciones Unidas, Fundación Cavendes. Guías de alimentación. Bases para su desarrollo. Informe de la reunión celebrada en Caracas del 22 al 28 de noviembre de 1987. Venezuela, 1988. 54p.

U.S. Department of Agriculture, Food and Nutrition Service. Building a better diet. USDA, 1979. 15 p.

U.S. Department of Agriculture, Science and Education Administration. The Hassle-free diet. Guide to a better diet. USDA, 1980. (Leaflet No. 567).

U.S. Department of Agriculture, Science and Education Administration. Ideas for better eating. Menus and recipes to make use of the dietary guidelines. USDA, 1981. 30 p.

U.S. Department of Agriculture. *Developing the Food Guidance System for "Better Eating for Better Health", a Nutrition Course for Adults*. USDA, 1985. 98 p.

U.S. Department of Agriculture, Dietary Guidelines Advisory Committee. Report of the dietary guidelines advisory committee on dietary guidelines for Americans, 1990. USDA. Human Nutrition Information Service, 1990[a]. 47 p.

U.S. Department of Agriculture, U.S. Department of Health and Human Services. Nutrition and your health: Dietary guidelines for Americans. USDA, DHHS, 1990[b]. 27 p. (Home and Garden Bulletin No. 232)

U. S. Departament of Agruiculture, U.S. Department of Health and Human Services. Eating right with the dietary guidelines. USDA, DHHS, 1992[a]. (Brochure).

U.S. Department of Agriculture, Human Nutrtrion Information Service. The food guide pyramid. USDA, HNIS, 1992[b]. 30 p. (Home and Garden Bulletin No. 252)

U.S. Department of Agriculture, Human Nutrition Information Service. The food guide pyramid. Beyond the Basic 4. USDA, HNIS, 1992[c]. (Brochure)

U.S. Department of Health and Human Services. Summary of findings food graphic testing and research. *HHS News* April 28, 1992[d]. (Informative sheets)

U.S. Department of Agriculture. USDA's food guide. Background and development. USDA Human Nutrition Information Service. Miscellaneous Publication # 1514, 1993. 38 p.

Velazquez, A., R, Hernandez and E. M. Galindo. Manual popular de nutricion. La nutricion y nuestra salud. Educacion Comunitaria para la Salud. Honduras, 1989. p 5-7.

Watcher, E. Manual de educacao nutritional para as maes. Edicoes Paulinas. Sao Paulo, Brasil, 1981. p 26-29.

Wolzack, Elena Marcucci de. *Manual de Dietas*. Guatemala, 1981. p. 27-34.

World Neighbors. Nutritious food for young children. World Neighbors, Studio Driya Media. Indonesia, 1993. p 6-7.

ANNEX

SUGGESTED PLAN FOR A CENTRAL AMERICAN WORKSHOP ON DIETARY GUIDELINES

This document presents a plan to develop a Central American workshop to discuss relevant issues on Dietary Guidelines development and implementation. With the participation of Central American nutritionists and facilitated by U.S.A. experts from the USDA and Tufts University, where the American Guidelines were developed. This workshop will be held in the first semester of 1995, and will be sponsored by the Pan American Health Organization and INCAP.

OBJECTIVES:

1. To encourage the development of appropriate dietary guidelines in Central American countries.
2. To stimulate the effective implementation of dietary guidelines in Central American countries.

FACILITATORS:

1. Anne Shaw (Nutritionist of the Human Nutrition Information Services USDA, PA of the Developing of the Food Guidance System)
2. Jeanne Goldberg (Associate professor of Tufts University, PA of Dietary Guidelines Graphic Alternatives)
3. Beatriz Murillo (Coordinator of Costa Rican GTB, coordinator of the Costa Rican Dietary Guidelines Development Committee)
4. Veronika M. de Palma (INCAP Staff, coordinator of INCAP Dietary Guidelines Committee)

PARTICIPANTS:

From the Countries: (Approx. 42 nutritionists)

A multisectorial team from each Central American country, which includes nutritionists representatives from:

School of Nutrition

Nutrition Association

Ministry of Health

Social Security Institutes

Ministry of Education and

Ministry of Agriculture

INCAP Staff: (Approx. 10 persons)

Members of the INCAP Dietary Guidelines Committee

Personnel related to Education and Communication

OUTCOMES:

The development of dietary guidelines is at different stages in each Central American country; Guatemala has developed the first version, Costa Rica started the process last August, Panama is ready to start. However El Salvador, Honduras and Nicaragua haven't initiated the process yet. For this reason, the outcomes will be different for each country:

El Salvador, Honduras and Nicaragua: A plan to develop the dietary guidelines

Guatemala, Costa Rica and Panama: A plan to review and implement the dietary guidelines.

DATE AND PLACE:

INCAP headquarters in Guatemala City, from June 11-16, 1995.

WORKSHOP ORGANIZATION:

INCAP dietary guidelines committee, will be in charge of the workshop organization. To start the process invitations should be send to the USA facilitators at USDA and Tufts University. At the same time, through the coordinators of INCAP staff in each of the countries, the nutritionists from different national institutions will be identify and invited. When each country team be identified, a needs assessment will be conducted, in each country, to find out the participants' needs in regards to:

1. Dietary Guidelines Development: The information that should be considered in this section can be:

- Target population
- Recommended dietary allowances
- Food groups definition
- Portion size definition
- Nutritional value of the portion size from each food group
- Number of portions from each group
- Food habits
- Economic and food availability issues
- Usability, universality and flexibility
- Health and nutrition issues

2. Graphic design development: The information to be consider in this section can be:

- Variety (foods to be included)
- Proportionality (Quality of each group to eat)
- Utility (foods available, eaten by the population)
- Effective Communication Strategies

3. Dietary guidelines implementation: Information useful in this section will be:

- Policy making awareness

- Stakeholders participation
- Public awareness
- Multisectorial approaches
- Coordination strategies

With the results of the needs assessment in the six countries, the committee will organize the workshop program. The first version of the program will be send to the facilitators for comments and feedback.

Considering the untended outcomes of this workshop, the characteristics of the participants and time available, a suggested program is presented afterward in this document.

LOGISTICAL, FACILITY AND LIVING SITUATIONS:

Arrival, Living and Eating:

- * The facilitators should arrive on June the 7th to review and adapt the workshop's program and to polish the workshop's details.
- * The participants should arrive to Guatemala on Sunday June 12 and should leave on Saturday June 17, to allow five complete days for the workshop. This means that will be necessary calculate per-diem for 7 days.
- * A bus from INCAP will be waiting for the participants at the airport. And will take them to the hotel. All the participants will stay at the same hotel to facilitate transportation and to decrease costs.
- * A bus from INCAP will transport the participants every day from the hotel to INCAP headquarters and vice-versa.
- * The participants will eat at INCAP's cafeteria, and everyone should pay for their own lunch.

During the workshop coffee breaks will be included.

Logistics:

- * The plenary sessions of the workshop will be developed at INCAP's auditorium. The small group discussions will take place in the different meeting rooms available in the institution.
- * Overhead, slide projector, TV set & VCR, newsprint and blackboards will be available at the auditorium.
- * A secretary will be assigned to help in the development of this workshop.
- * At least two lap-tops computers will be available for the participants.
- * Notebooks, pens, and handouts will be provided to the participants.

WORKSHOP METHODOLOGY:

For the training strategy we suggest training a multisectorial team, which includes nutritionists from different sectors. It means that at least 6 professionals from the same country, but working in different sectors, will sit-down together for 5 days discussing how to develop/implement the dietary guidelines in their countries.

There are three advantages to using of this multisectorial strategy: First, it allows coordination of resources, time and responsibilities, among institutions. Second, it enhances the policy and decision-making process in each country. And third, it promotes a participatory training in which participants seen each other as resources

The training style will link information and action. The workshop will be divided into three main activities:

1. Country Experience's Review: Using plenary sessions, the participants will have the opportunity to review the USA experience in the developing and implementation of dietary guidelines. The experiences of Guatemala, Costa Rica and Panama in developing process. Each country will present their experience in terms of: Process followed, weakness and strengths, lessons learned, sources of information, effective and ineffective use of resources, participants in the process.

2. Proposal Developing: Taking into account the country experience's, the participants, grouped by country, will have the opportunity to produce a proposal to develop or to implement dietary guidelines in their own countries. Each proposal will be different according to each country's context.

3. Proposal Presentation: Each country will present the proposal in a plenary session, to allow the exchange of ideas, and to receive feedback from participants and from the facilitators.

WORKSHOP SCHEDULE:

Sunday June 11:

am/pm Participants arrival

Hotel arrival

16:00 Welcome session - INCAP's Director

17:00 Ice breaker activity - Vde Palma/ S Murillo

18:00 Program review - Vde Palma/ S Murillo

19:00 Welcome cocktail

Monday June 12:

8:00 Dietary Guidelines development - USA experience -A Shaw/J Goldberg

9:30 Dietary Guidelines implementation - USA experience -A Shaw/J Goldberg

10:30 Coffee break

11:00 Group discussion on USA experience (intercountry groups)

12:30 Lunch

13:30 Dietary Guidelines development - Guatemala Experience- VdePalma

14:30 Discussion on Guatemala's experience (intercountry groups)

15:30 Coffee break

16:00 Dietary Guidelines development - Costa Rica Experience- S Murillo

17:00 Group discussion on Costa Rica's experience (intercountry groups)

18:00 Evaluation of activities of day 1

Tuesday June 13:

8:00 Group Discussion "How to develop/implement Dietary Guidelines in Each country"
(country groups)

10:00 Coffee break

10:30 Continue Group discussion by country

13:00 Lunch

14:00 Continue group discussion by country

15:30 Coffee Break

16:00 Continue Group discussion by country

18:00 Evaluation of activities of day 2

Wednesday June 14:

8:00 Continue Group discussion by country

10:00 Coffee break

10:30 Continue Group discussion by country

13:00 Lunch

14:00 Continue group discussion by country

15:30 Coffee Break

16:00 Finish Group discussion by country

18:00 Evaluation of activities of day 3

Thursday June 15:

8:00 Development of Dietary Guidelines Proposals
El Salvador presentation

9:00 Feedback to El Salvador's Presentation

10:00 Coffee Break

10:30 Honduras presentation

- 11:30 Feedback to Honduras' presentation
- 12:30 Lunch
- 13:30 Nicaragua's presentation
- 14:30 Feedback to Nicaragua's presentation
- 15:30 Coffee break
- 16:00 Dietary guidelines implementation proposals
Guatemala's presentation
- 17:00 Feedback to Guatemala's presentation
- 18:00 Evaluation of activities of day 4

Friday June 16:

- 8:00 Costa Rica's presentation
- 9:00 Feedback to Costa Rica's presentation
- 10:00 Coffee Break
- 10:30 Panama's presentation
- 11:30 Feedback to Panama's presentation
- 12:30 Lunch
- 13:30 Group discussion on follow-up activities (intercountry groups)
- 16:00 Coffee break
- 16:30 General discussion on follow-up activities
- 18:00 Evaluation of activities of day 5 and general evaluation of the workshop

Saturday June 17:

Return to countries

EVALUATING WORKSHOP OUTCOMES

Process evaluation:

The training activity will have two kinds of evaluation, at the end of each day a formative

evaluation will be conducted. With the results of this evaluation improvements will be done for the next days program. At the end of the workshop, a summative evaluation will be done. The results of the latter evaluation help us know whether the objectives and outcomes were met and the opinion of the participants in these activities.

Product evaluation:

Each country will finish a proposal to develop or to implement the dietary guidelines in their country. INCAP will help the countries to accomplish the activities suggested during the follow-up discussion. INCAP will provide technical assistance to the different countries.

ACTIVITIES DESCRIPTION & RESOURCES NEEDED:

DAY 1 SUNDAY, JUNE 11:

Welcome session:

Description: Lecture Role of Dietary Guidelines in Nutrition and Lifestyles Promotion

Resources: Visual aids transparencies/slides), handouts, overhead, slide projector.

Time: one hour

Responsible: Dr. Hernan L. Delgado- INCAP's director

Ice Breaker:

Description: Personal Adjectives. The purpose of this dynamic is to introduce each other in an enjoyable way. The procedure to develop this exercise is the following:

- * Ask each participant to think of an adjective which corresponds to the first letter of his/her name and write his/her name and adjective on a self-adhesive label
- * Have participants sit in a circle
- * Beginning anywhere, have one participant introduce him/herself saying " my name is....my adjective is.... or "I am (adjective) (name) ie. "I am Friendly Fred"
- * The next participant repeats the name and adjective of the preceding person and then introduce

him/herself in the same way. ie Friendly Fred and I am Happy Helen. The process is repeated around the circle, each one in turn having to remember (or read from the labels) the names and adjectives of all the participants who have introduced themselves in the order in which they are seated.

Resources: Self-adhesive labels

Time: one hour

Responsible: Veronika M. de Palma & Sandra Murillo

Program Review:

Description: Review of the program day by day, to be sure that it meets the participants' needs.

Resources: Program handouts

Time: one hour

Responsible: V.de Palma/ S. Murillo

DAY 2 MONDAY JUNE 12:

Dietary Guidelines Development and Implementation- USA experience:

Description: Lecture

Resources: Visual Aids, overhead, slide projector, blackboard, handouts

Time: two hours

Responsible: Anne Shaw & Jeanne Goldberg

Group Discussion on USA Experience:

Description: Divide participants in groups of 7-10, groups should discuss application of USA experience to Central American countries. For this reason group members should be from different countries.

Resources: Group discussion's guides

Time: one and half hour

Responsible: Participants

Dietary Guidelines Development- Guatemalan Experience:

Description: Lecture

Resources: Visual Aids, overhead, slide projector, blackboard, handouts

Time: one hour

Responsible: Veronika M. de Palma

Dietary Guidelines Development-Costa Rican Experience:

Description: Lecture

Resources: Visual Aids, overhead, slide projector, blackboard, handouts

Time: one hour

Responsible: Sandra Murillo

Group Discussion on Guatemala and Costa Rica's Experiences:

Description: Divide participants in groups of 7-10 , groups should identify similarities and differences among models presented, as well as applications of this models to their own countries.

Resources: Group discussion's guides

Time: one and half hour

Responsible: Participants

Evaluation of Activities of Day 2:

Description: Using a guide evaluation, ask for comments to activities realized in day 2. Ask for suggestion for day 3.

Resources: Evaluation guide

Time: half hour

Responsible: Vde Palma

DAY 3 & DAY 4 TUESDAY&WEDNESDAY, JUNE 13 & 14:**Group Discussion How to Develop/implement Dietary Guidelines:**

Description: Divide the participants by country, INCAP participants will be assigned to the different groups. The facilitators will be helping all the groups. Each group will discuss, based on presentations and previous group discussions, how to develop dietary guidelines in their own country (Nicaragua, El Salvador and Honduras). Or how to review/implement the dietary guidelines in their own country (Guatemala, Costa Rica and Panama).

Resources: newsprint and markers pens, discussions guides, bibliography.

Time: 16 hours

Responsible: Participants

Evaluation of Activities of Day 3&4:

Description: Using a evaluation guide, ask for comments to activities realized in day 3&4. Ask for suggestion for day 5

Resources: Evaluation guide

Time: half hour

Responsible: S Murillo

DAY 5 THURSDAY JUNE 15:**Development of Dietary Guidelines: El Salvador's Proposal:**

Description: The group from El Salvador will present their proposal to develop dietary guidelines. The presentation will followed by feedback from the participants, regarding how to improve the proposal.

Resources: Visual Aids, overhead, blackboard

Time: two hours (one for presentation and one for feedback)

Responsible: El Salvador's group, all participants

Responsible: VdePalma

DAY 6 FRIDAY JUNE 16:

Implementation of Dietary Guidelines: Costa Rica's Presentation:

Description: The group from Costa Rica will present their proposal to implement the dietary guidelines. The presentation will followed by feedback from the participants, regarding how to improve the proposal.

Resources: Visual Aids, overhead, blackboard

Time: two hours (one for presentation and one for feedback)

Responsible: Costa Rica's group, all participants

Implementation of Dietary Guidelines: Panama's Presentation:

Description: The group from Panama will present their proposal to implement the dietary guidelines. The presentation will followed by feedback from the participants, regarding how to improve the proposal.

Resources: Visual Aids, overhead, blackboard

Time: two hours (one for presentation and one for feedback)

Responsible: Panama's group, all participants

Group Discussion on Follow-up Activities:

Description: Participants will remain in country groups, to discuss follow-up activities, to develop or implement the dietary guidelines, including technical assistance and bibliography needs. Each group will present their conclusion and a general discussion will be facilitated.

Resources: Newsprint, pen markers

Time: four hours (two hours for group discussion and two for general discussion)

Responsible: Participants

Evaluation of Activities of Day 6 and General Evaluation:

Description: Using a evaluation guide, ask for comments to activities realized in day 6.

Participants will fill out a questionnaire with questions about the process and the results of the workshop.

Resources: Evaluation guide, evaluation questionnaire

Time: half hour

Responsible: S Murillo

BUDGET AND FUNDING

ITEM	US DOLLARS
Ticket + per-diem (1000 per participant x 42 participants)	42 000
Ticket + per-diem (1500 per facilitator x 3 facilitators)	4 500
Salary of USA facilitators (200/day/facilitator=300/10/2)	6 000
Secretary Salary	200
Cocktail	600
Office supplies (carpets, labels, pencils etc)	200
Photocopies	100
Transportation	300
Coffee breaks (100/day)	500
Other expenses	500
TOTAL	\$ 54 900

FUNDING:

The workshop will be funding 50 % by Pan American Health Organization and 50 % by the Institute of Nutrition of Central America and Panama.