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NUTRITION PLANNING AND POLICY MAKING
IN LESS DEVELOPED COUNTRIES

by

WENDELL ALLEN SMITH, JR.

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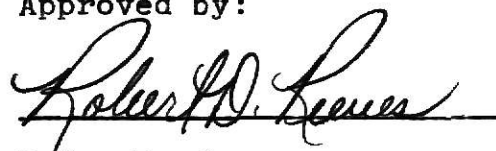
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INTRODUCTION

"All governments should accept the removal of the scourge of hunger and malnutrition . . . as the objective of the international community as a whole, and accept the goal that within a decade no child will go to bed hungry, that no family will fear for its next days bread, and that no human being's future and capacities will be stunted by malnutrition" (1). This quote is from then Secretary of State Henry Kissinger at the World Food Conference, Rome, 1974. But despite increased international concern and cooperation, malnutrition continues to be a major problem facing the globe. Today approximately 750 million people will go to bed hungry instead of the 460 million estimated in 1970.

Unlike famines which are dramatically visible, malnutrition is generally unseen. Nevertheless, it's day to day erosion of health takes a devastating toll on the wellbeing of mankind.

Malnutrition either causes or contributes to the childhood death rates in developing countries. Table 1 compares childhood death rates of some selected countries.

"There is little dispute that malnutrition is the biggest single contributor to child mortality in the developing countries" (2). In Latin America malnutrition has been identified as the primary or an associated cause in 57 percent of all deaths of 1-4 year olds; it is an important factor in more than

TABLE 1

Changes in Number of Childhood Deaths in Selected Countries if 1970 Mortality Rates of India, Taiwan, Japan, and Sweden Are Applied (in thousands of deaths)

Country	Deaths of Infants under 1 (a)					Deaths of Children 1 to 4				
	At country's own rate	Difference at rate of (b)				At country's own rate	Difference at rate of (b)			
		India	Taiwan	Japan	Sweden		India	Taiwan	Japan	Sweden
India	3,238	0	-2,772	-2,888	-2,935	2,928	0	-2,643	-2,841	-2,881
Pakistan	972	-21	-835	-869	-884	1,059	-180	-973	-1,033	-1,045
Egypt	171	-32	-142	-149	-152	173	+21	-154	-167	-170
Guinea	41	-14	-38	-38	-39	29	-4	-27	-28	-29
Cameroon	40	0	-34	-35	-36	36	+4	-32	-35	-35
Guatemala	21	+12	-16	-17	-18	20	+12	-17	-19	-19
Taiwan	9	+48	0	-2	-3	7	+63	0	-5	-6
Japan	30	+244	+10	0	-4	9	+274	+20	0	-4
United States	77	+425	-4	-22	-30	15	+645	+48	6	-4
Sweden	2	+19	+1	*	0	*	+21	+2	+1	0

Sources: UN, Demographic Yearbook, 1970; and Population Reference Bureau, "1971 World Population Data Sheet" (2).

*Less than 1,000

(a) Live births

(b) Negative numbers represent lives that would be saved at projected rate: positive numbers reflect additional number of deaths at projected rate.

one-half to three-fourths of deaths in the first months of life (2).

Moreover, malnutrition causes otherwise minor childhood diseases to become fatal. For example, respiratory and gastrointestinal infections in Nicaragua are responsible for 15.3 percent of all deaths compared to 0.4 percent in North America (2). In Guatemala, 500 times as many preschool-aged children die from diarrheal diseases as in the United States (2).

But the effects of malnutrition are not limited to measurable results, like death. Because many survive to live with limited physical capacity or possible impaired mental development. This may lead to a further problem diminished productivity.

The importance of nutrition in the development of an individual is well documented but what is its effect in the development of a nation? Furthermore, what is the cost to a nation when large segments of its population are never able to reach their potential? Does nutrition play a primary or secondary role in development? To the development planner/politician in a developing country with limited resources to work with these are important questions.

Is malnutrition to be seen as a welfare issue, as it has traditionally, or is it a development problem? This welfare view of malnutrition partly reflects why few countries in the past have had nutrition programs and fewer still have had nutrition plans or policies.

The purpose of this paper is to investigate the importance

of nutrition planning in Less Developed Countries. Less Developed Countries (LDC's) is a general term to designate non-industrialized or developed countries. LDC's constitute approximately two-thirds of the worlds population and can be divided into two classifications: Third World and Fourth World. Fourth World countries are often mired in poverty. They are characterized by a high illiteracy rate and high infant mortality and population rates. Fourth World includes countries like Bangladesh, Pakistan, Ethiopia, and Haiti. Third World countries are more economically sound and include countries like Argentina, India, and Brazil. Nutrition planning as a concept and the systematic approach presented in Chapter Three are designed to further the development process of these countries.

NUTRITIONS' ROLE IN DEVELOPMENT PLANNING

"The basic fact about the nutrition problem is that it is primarily a poverty problem: a problem of ineffective demand rather than ineffective supply" (3). This quote of Dr. Joy's reflects a different emphasis on nutrition programs than has been placed on them in the past. Past emphasis has primarily been to increase agricultural production or availability with the understanding that more food means less malnutrition. But the view that population is outgrowing the growth in food supplies, leads to the wrong conclusion that the solution to the problem lies in the limitation of population growth and promoting the growth of food supplies (4). While these are important factors, total emphasis on them maligns priorities to produce solutions that have failed.

Examination of the causes of malnutrition reveals that its roots are economic but also sociological, psychological, physiological, and political. This multi-faceted causality dictates that the problem be approached in a multi-disciplinary fashion.

Traditionally, concern for nutrition programs has been low. This is due in part to development planners' failure to recognize the role or deterrent malnutrition has on national development.

No one denies the importance of nutrition on the development of an individual's physical and mental well-being. Recent

work has implicated early protein calorie malnutrition (PCM) to reduced mental capability, impaired learning, and causing behavioral problems (5). However, when one moves from the individual to the community as a whole, the role is less clear.

What are the consequences of malnutrition on those surviving severe PCM? In a classic animal study of the 20's, Jackson and Steward established that malnutrition, produced in animals during the sucking period, resulted in permanent reduction in size (6). Further research of animals has substantiated that imposed malnutrition in the rapid phase of growth, when the rate of cell division is at its maximum, reduces body growth and changes the structure of some organs (5, 7, 8). In humans the information is fragmented due to other nonnutritional factors that may contribute to growth and development. Therefore, the presence of malnutrition conjointly with other potential deterrents like familial characteristics and environmental circumstances make it difficult to determine the contribution that inadequate nutritional intake can make on an individuals development. Although permanent stunting can be due to many factors, early malnutrition is clearly a factor.

Malnutrition in preschool children and consequent low levels of mental performance is amply documented where malnutrition is prevalent (5). Mental performance studies of Kwashiorkor patients have shown generally successful results from rehabilitation except in infants under six months of age (9). Although the permanent effect of early malnutrition on mental development and learning behavior is still

controversial, evidence implicates it as producing structural and behavioral changes. According to Cravioto and DeLicardie, "it is evident that children who have survived the severe forms of malnutrition show alterations in intellectual performance and learning ability which clearly imply a higher rate of failure to profit from school exposure (5).

Evidence points to questions the development planner must consider regarding malnutrition. For example, what extent does malnutrition play on the learning abilities of children hence intellectual capacities of future generations? Also what role in a workers physical activity and productivity does malnutrition have? If significant, will a country be impeded in its development? Also what programs should be promoted to improve the nutritional status of the malnourished? Does increasing the per capita GNP elevate the nutritional status of the hungry? Unfortunately, these and other questions are often without clear and straight forward answers. In other words, it's difficult to quantify with precision the adverse effects of malnutrition on society. And "although information is becoming increasingly available about the importance of adequate protein nutrition in the diet of the populations of the developing countries, suprisingly little research effort has been directed to examining nutrition as such within the broad context of human resource development and its impact on the quantitative and qualitative progress of nations" (10).

According to Mr. Barg the reason nutrition has not been translated into sufficient concern in the past to merit high

priority programs within the scheme of nutritional development is due to the following reasons: First, there has been a lack of widespread awareness about the implications of adverse nutritional status on populations, particularly in low-income groups. Second, the magnitude and severity of the problem of malnutrition among various population groups, especially high risk groups, has not been clear in many countries. Third, the use of aggregative per capita data dealing with supply and input consumption of nutritional inputs has tended to hamper rather than assist policymakers in determining the extent of nutritional need among various groups. Furthermore, he contends there has been an excessive reliance, in the absence of more refined survey data, on aggregate data. Fourth, concern about the implications of malnutrition for the future of the developing countries and their people has come from the specialist, the scientists, and the technical community and not widely articulated by or for politicians, planners, or government decision-makers (10).

Malnutrition has traditionally been thought of as an indicator of underdevelopment. Promote development and malnutrition will go away. This philosophy leads planners to view expenditures on social programs as welfare. Therefore, developers must pursue an accelerated rate of overall economic development and eliminate poverty. So that, as the level of general economic development improves and policies promoted to increase employment, the purchasing power available in the hands of consumers will rise hence the enhancement of nutritional status

of the population at large. And increases in disposable income will be used, in part, for the purchase of foods containing a higher nutrition value. But history is proving this macro-view of nutrition to be ineffective in meeting the nutritional needs of the needy. Development has failed to improve the daily life of the majority - the low income people.

Malnutrition is being recognized by many developers as a barrier to development. Research studies relate malnutrition to low productivity, diminished human capacity, poor achievement, and increased morbidity and mortality (5, 11). In other words, malnutrition contributes to a wasting of human resources.

So economists have begun considering "human capital" in national development planning. But for policy makers to explore the magnitude of malnutrition and determine the best approach to improving nutrition they must have techniques to determine the cost/benefit of various programs. Nutritional planning models have been developed, ranging from the very simple to the highly complex (3, 13, 14). The following chapter will look at one such model in detail.

Possible benefits from nutrition programs include:

1. reduction in infant and child mortality;
2. elimination of retardation due to PCM; and
3. improved learning behavior and productivity resulting from improved physical development, alertness and reduced absenteeism due to illness (15).

But benefits must be qualified because of the interrelatedness of nutrition to other factors. For example, infant and child

mortality is related to a number of factors like insanitary water supplies, parasites, dietary mores, birth order of the child and age of the mother. Also benefits do not occur at all the same time. Some are immediate such as labor productivity, while others occur over a long period of time like lower infant mortality.

Clearly nutrition programs are only part of the development puzzle. And it is tantamount that nutrition be presented in a complementary wide-angle approach to development. Furthermore for nutrition intervention to be really developmental other kinds of changes are necessary as well. To do this a radical change must take place, attention must be directed to the form and scope of nutrition planning and programming, organizational needs, personnel requirements, and research orientation (16).

The next chapter presents a systematic approach to nutrition planning and policy making that promotes a complementary approach to development.

SYSTEMATIC APPROACH TO NUTRITION PLANNING

Malnutrition has historically been confronted one of two ways: the Western or the Communist approach. The Western approach evolves an eradication of malnutrition in the course of economic development. As the overall level of wealth increases and is dispersed throughout society, with health related improvements, undernutrition is slowly eliminated. This process is evolutionary, unplanned, and takes a long time to complete. The Communist approach by contrast is revolutionary and takes a relatively short period of time.

Today malnutrition in Less Developed Countries is being addressed by nutrition planning. This concept seeks to represent a "middle way". It rejects the evolutionary process of Western societies and seeks a viable alternative to the disruptive Communist model.

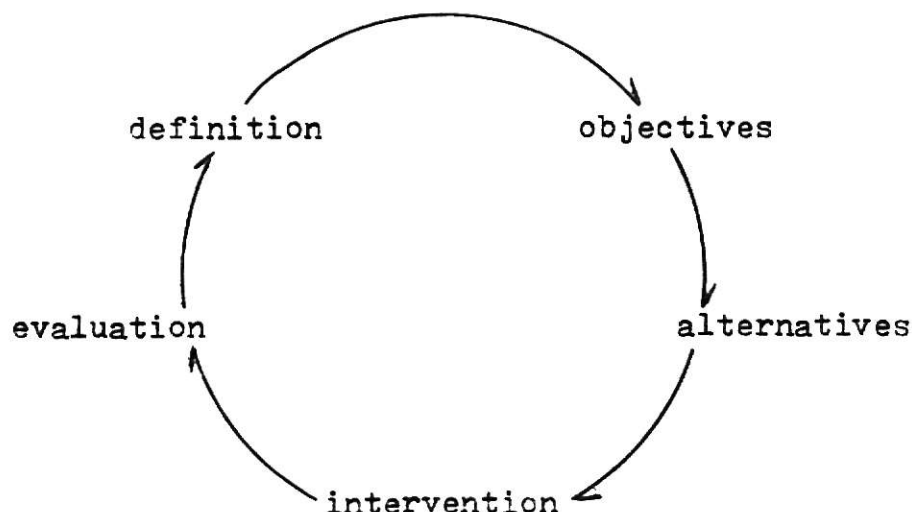
The planning approach presented in this section is a systematic approach. It is an adaptation of systematic planning techniques employed in other disciplines. This approach is meant to give 5 to 10 year planning and can be classified as indictative planning. That is, it does not disrupt the already existing government framework except to attempt to systematically coordinate its actions to contribute as efficiently as possible to national goals.

Nutrition planning then, "is fundamentally an attempt to systematically address a national problem so as to find the

most effective solutions within the socioeconomic and political constraints facing the country" (17). Unfortunately few countries, including developed nations have clearly stated food and nutrition policies derived from systematic planning.

The following systematic approach proposes that malnutrition should properly be a priority concern of development policy and that its eradication will require a new scale of effort and commitment involving the collaboration of many institutions and disciplines. This approach is a product of Bert (15) and Joy (3). My intention is to pull together their work and where possible simplify it. Anyone interested in pursuing this further should consult their work.

This approach consists of five steps: problem definition, establish plan objectives, comparison of alternative measures, selection of interventions and their integration into a unified program, and evaluation. This process is graphically presented below:



Step One: Definition of the Problem

The first step in the planning process is describing the problem. This entails collection of data to view the problem from various angles. Who are the malnourished? Where are they? What are the specific nutritional deficiencies? How severe are they? What are the trends? Are there seasonal variations?

Some of the analytical methods used to measure the nature and extent of malnutrition are:

1. Food balance sheets. Estimated supplies of different foods within a country (or region) are translated into calories and nutrients, from which the per capita amounts available for human consumption are computed after taking account of losses and other uses. This amount is then compared and standards are recommended for that country, to arrive at an estimate of the aggregate nutritional gap.

This method can only give a broad appraisal of the nutritional status in a country. It does not indicate individual status for it fails to take into account the dispersion of the income distribution within the population, regional variations, intrafamily food distribution mores, or seasonal hunger. Thus it does not yield a profile of who is suffering malnutrition or why. Rather it leads to an average of the collective need which can be operationally meaningless.

2. Consumer expenditure surveys. In combination with income distribution data, consumer expenditure surveys of the amount and kind of food purchased at specified levels of income

or expenditure can yield estimates of the numbers of people consuming different levels of nutrients. These figures are then compared to minimum nutritional requirements to give a picture of the overall magnitude of nutritional deficits, the distribution of the deficits among areas and certain broadly defined population groups, and the apparent consumption levels of different nutrients.

Like balance sheets, this method also only gives an overview of the nutritional situation. It lacks individual data such as food distribution within a family or health problems that reduce food utilization.

3. Food consumption surveys. Data are gathered on the kinds and quantities of food consumed in selected households which represent the sociological, demographic, and economic patterns of the general population. Nutritional status can be calculated by comparing the nutritive value of diets with nutritional requirements.

This method has the advantage of being more individualistic than the previous two but can have many problems of accuracy. Answers given may reflect errors in judgment as well as manipulation of the facts to present a favorable image by the family being questioned. Special influences on dietary patterns - such as season of the year, periods of the month and week, paydays and holidays - must be accounted for. Also reported nutrients may be lost to waste, cooking loss, or malabsorption.

4. Medical nutrition survey. This involves a field examination of the nutritional status by clinical/biochemical

measurements and height/weight ratios. It is the most accurate, most costly, most time consuming, and the most difficult of the methods.

This method suffers from small samples that may not represent the whole population. If various direct surveys are compared to project a broader picture, they often suffer from a lack of standardization of clinical and biochemical definitions, and methodological problems such as failure to make allowances for seasonal variations.

Case studies are another source of information. They are valuable for gaining insight into the nature of the problems to be treated and to the identification and design of relevant policy measures.

Other sources can be based on interviews of nutrition experts and people involved in field work of other disciplines for different purposes but which may present valuable information.

This step provides the planner with a frame of reference from the point of need. He recognizes the specific maladies, e.g., protein-calorie malnutrition, iron-deficiency anemia or vitamin A deficiency. Further information includes qualifications on who is deficient and to what extent.

Step Two: Establish Plan Objectives

To establish nutrition objectives the planners and decision makers must come to terms with various issues. They need to outline the desired aims, such as preservation of life,

reduction of deficiency diseases, freedom for infection, and development closer to genetic potential. They also need to outline whether the program is developmental or relief; whether it is to satisfy immediate needs or long-term improvements; and whether it should aim to appease hunger or raise nutritional standards.

An obstacle of ever increasing importance to the planner is the limitation of resources. Developing countries must ask what the maximum return is that can be expected for the least amount of expenditure. It doesn't seem valid for the planner to develop programs with safety margins in borderline economies. This necessitates a need to define human nutrition "needs" in terms of "response functions" rather than "requirements" for not only is there an important degree of interdependence between intakes but also there is an important balance between 'too little' and 'too much'.

Yet our understanding of nutritional response functions is lacking. How human wealth and performance varies with nutrient intake is not fully understood. This is true in the relationship of vitamin intake and disease resistance; and the relationship between energy intake and energy output.

The next step in objective making is selection of a target, based on findings of the problem definition. What group or combination of groups should the program be directed to: infant, preschool-aged child, school child, pregnant woman, nursing woman, or the "breadwinner"?

Three important considerations for objective nutrition

preparation that will affect the planning and budgeting process are:

1. The objective must cite a specific deficiency and a numerical target, or final output, as a guide for estimating the needed resource inputs. Without data on costs, the relation between increasing inputs and higher levels of benefits - it is impossible to know how much it would cost to reach any proposed target or whether having reached it how much more money it would take to reach a more optimal goal.

2. The objective must have a time frame that requires a definite sequence of action for attaining the objective by a given date and resources to be allocated at each step in the sequence.

3. There are resources required by the program. Their provision requires a number of subobjectives, marking paths of the programs and conditions that will have to be created along the way toward the specific target.

Often studies of nutrition concentrate on identifying the nature and scope of the problem without enough attention to the root causes. Poor nutrition is generally the product of poverty and geographical change brought on by migration, especially rural to urban. If malnutrition is to be eliminated the planner should concentrate on those socioeconomic factors directly influencing diet and utilization, that can be manipulated to improve nutritional status. Some of the causal factors are low family income, local ecological deficiencies, distribution shortcomings, price relationships, food waste, and errors of

consumer behavior.

Two approaches are available to analyze the socioeconomic environment of malnutrition, conventional and systematic. In the first, the analysis and solution focus on the most immediate determinants of the problem, and generally the identification of a nutrition deficiency prompts reflex responses such as proposals for new formulated foods or for health center activities. A systematic approach, however, is more comprehensive and less likely to jump from problem to solution. It moves backward to study the complex interacting forces of the environment within which the malnutrition arises.

To combat protein deficiencies among children under two, for instance, the prime determinants - food intake and health - would be examined separately. Each would be subdivided to isolate at each stage the most important or potentially important influences. Whenever possible answers would be quantified.

The analytical process of drawing out of the system and of pressing for causal factors and relations constitutes a disciplined systematic search for relevant factors. In the following one problem as well as each indication of what may be an important contributing element, the nutrition planner picks his way through the connecting paths of the system that have been exposed in the process of describing the problem in its fullness.

This analytical process requires more data than is available. However, even if the total process isn't utilized this would represent an improvement over the impressionistic or

unstructured nutrition planning that is generally prevalent.

Step Three: Comparison of Alternative Measures

The nutrition planner now has a basis for judging the relevance and relative effectiveness of the kinds of interventions needed. The nutritionist often recommends: nutrition education, fortification programs, institutional programs or may develop new or particular interventions suggested by the particular needs of the country, e.g., intervention relevant to regional storage and distribution, opportunities for income supplements, or price policies.

The attractiveness of any intervention will depend on the nutritional problem at issue, the particular population group comprising the target, the factors that determine the nutritional status of that group, and the intrinsic characteristics of the intervention. A first step is developing a nutritional profile of the population group from data provided in step one. This could then be an indicator of the possible effectiveness of intervention programs. Population groups are typified by the following characteristics:

1. Nonmonetized subsistence groups: Very low real income. Regional or local ecologically determined nutritional deficiencies. High incidence of infectious diseases aggravated by malnutrition. Deleterious food preparation habits. Low food productivity combined with substantial spoilage and losses. Illitaracy.

2. Low-income small farmers, partially monetized:

substantial portion of diet comprises local staple, locally milled every day or so. Small expenditures on processed products such as salt, sugar, tea, and condiments. Poor food habits and low productivity. Limited access to commercial distribution channels and certain basic mass media. Low functional literacy. (Small tenant farmers probably less responsive to price system and productivity - raising programs because of insecurity of tenure and rental arrangements).

3. Low-income landless agricultural laborers: same as low-income farmers but also socially disadvantaged and less well served by government agencies at the local level. Limited benefits from general economic progress because of seasonal underemployment.

4. Low-income urban migrants: deleterious food habits. Slightly higher income often spent on nutritionally inferior forms of processed foods. High mass communications exposure. Declining breast feeding and high incidence of infant disease from unstable feeding procedures.

The nutritional profile can be best used as a filtering process to clarify the potential impact and limitations of a given project. A cereal fortification alternative obviously would be meaningless to a group whose food is not centrally processed. Price policies would have little impact on non-monetized segments of the population. To be functional a project need not match the profile in all points.

Next, alternatives need to be compared in terms of their costs and relative effectiveness, their impact on other

activities, and certain practicalities not easily accounted for in economic analysis.

Costs and benefits are, of course, an important part of intervention programs but unfortunately little is known about the impact of various approaches. A common mistake is failure to take all costs into consideration. Another potential pitfall is restriction of benefits to easily measurable ones because that would ignore the main benefit: the increased well-being (mental and physical) of those involved. So, some interventions do not lend themselves to standard quantification of costs and benefits, in part because of severe limitations of data and in part because of the quantification difficulties inherent in programs designed to change human behavior. The planners contribution here is to narrow down as much as possible what is known about the potential costs and benefits of such interventions and to make clear what is conjecture. Decisions in such instances often must be left to common sense judgment, which will be easier if the planner is honest about assumptions and uncertainties.

Another consideration is the effect on non-nutrition sectors. Some nutrition interventions may strengthen other development efforts. For example, free food supplements may, for instance, draw young women to a family planning clinic or improve student well-being and school attendance rates.

Finally, some of the constraints to be considered in analyzing the alternatives beside standard questions of

feasibility (availability of equipment and other inputs, legal requirements and so on) are: first, how much dependence does it have on administrative structure? Good management is a scarce resource so that preference should be given to interventions requiring minimum dependence on administrative structure. Second, is it replicable? If the project's success depends on multiplying the impact of an isolated success that is dependent on the personal initiative and vitality of the initiator - for example; a pilot village applied nutrition project - the chances of success are more limited than for broad, sweeping policies creating the same nutritional impact without going through the replication effort. Another is time, especially important with respect to protein-caloric malnutrition among young children. The criticality of early periods of growth for subsequent mental and physical capacity requires the planner to heavily discount those options that will begin to affect a nation's nutritional status only after a long time. And finally, such practical bureaucratic questions of the capabilities, commitment, and forcefulness of the people in charge of proposed programs, and of the number of officials and the time involved in the clearance procedure, combined with or are factors which help to predict program success or failure.

The planning analysis thus far will help determine which set of inputs, or which program, would be likely to achieve the desired target, within the desired time frame, for the least cost. However, the total cost commonly turns out higher than the resources eventually provided through the budgetary process.

After the financial availabilities and policy frameworks are set, it is usually necessary to return to the drawing board. Some realignment of objectives, time frame, and the mix of projects will have to be made within the limits of the resources actually budgeted. Objective-making is an iterative process, involving frequent adjustments throughout the planning stages. As data are collected and analyzed, the planners notions may change about the nature of the problem and costs to overcome it. Flexibility to alter objectives is essential to the entire process.

Step Four: Selection of Interventions and Their Integration Into a Unified Program

Throughout the planning sequence the nutrition planner, in an attempt to keep his efforts relevant, tries to get guidance or at least clues indicating areas and scope of interest of the policy makers. Now he places before the decision maker the options, alternative objectives, alternative strategies, and the potential programs and consequences of alternative strategies.

Decisions finally result from a complex debate and adversary process among various interest groups, the legislative body, and the executive, involving political values and judgment gased on emotion, intuition, or the desire to protect a bureaucratic position. Other than to clarify points or articulate options the planners influence is minimal. Once the decision is made it should effect a mix of immediate,

intermediate, and long-term payoffs, blending action and research components, with greater emphasis on action.

Step Five: Evaluation

After decisions have been made, policies formulated, programs adopted, manned, and put into operation, the next step is to determine whether the hypothesis has worked out, with the ultimate measure of activities being their contribution to achievement of the broad objective. Evaluation measures the actual performance; informs the planner of weaknesses needing adjustment, assumptions needing alteration or further research, and how costs and benefits are developing under actual operating conditions. At the outset, programs should be systematically designed in a way that will generate data for measuring the program's effectiveness.

Some questions that may be helpful in evaluating the implications of the plan are:

1. What will be the overall impact on the nature and extent of malnourishment in the short run and in the long run?
2. What will be the consequences in terms of improved health and performance?
3. Have the appropriate priorities been asserted in determining who shall benefit and who not benefit?
4. What will be the consequences in terms of growth and other planning objectives?
5. What will be the consequences in terms of general equilibrium effects, especially for food and agriculture?

6. Are the implied resources available? Do the benefits of their mobilization for these programs meet their opportunity costs?

Critique of Approach Used

The preceding approach represents a current model of nutrition planning. But this type of approach is not without its faults nor critics.

In a recent article (18), Dr. Field attempts to "temper the optimism" generated in nutrition planning by making the following observations. He points out that two principal tendencies may be discerned in nutrition planning. "One may be termed the 'intellectual establishment' view and the other the prevailing 'bureaucratic' view which is found in the governments of most low-income countries which have begun to plan nutrition oriented programs" (18).

The 'intellectual establishment' view is shared by professionals in the U.N. system, echoed in voluntary agencies as well as academic specialists in such universities as Sussex, Cornell, and MIT, and is reflected in the preceding model. According to this view nutrition planning by definition is very broad, covering anything and everything that is thought to impinge upon nutritional status. Furthermore this view assumes that malnutrition is a reasonably high priority concern of public policy.

The bureaucratic perspective is more focussed. Nutrition is only one of many categories in the planners lexicon. And,

generally what goes on in one sphere has little to do with what goes on in another. Nutrition planning, in this view, is usually defined in terms of what it is not. That is, it is not public health, sanitation, etc. What nutrition is, then, is quite restricted: supplementary feeding, mothercraft centers or fortification programs. This view results in a severe constraint on the range of subject matter likely to be viewed as appropriate in nutrition planning efforts.

The strength of the 'intellectual establishment' view is its emphasis on results; its weakness is it unrealistic, cosmic view that frustrates practitioners. In contrast, the 'bureaucratic' view focuses on process, which maintains the system. But its weakness is that the system is often a barrier to substantive achievement. Hence, the two views stress different things and are prone to work at cross-purposes.

The author indicates two further points of confrontation. First, that government planners would consider all the analytical techniques as a waste of time, irrelevant to their capabilities. Therefore, most of the "outsiders" advice will go unheeded. Second, nutrition planning becomes, by logic of the bureaucratic image of it, how to better distribute supplementary foods, how to reach and teach more mothers the virtue of good nutrition, and so on. The task becomes one of tampering with mechanisms already in place which meets with governmental resistance, threatening their stability.

Dr. Field strongly advocates a "middle way" for nutrition planning but feels some approaches are overly optimistic and

offers some objective observations. He recommends nutritionists be more modest in their expectations and aware of their inherent limitations. But he offers no solutions except a strategy he calls "nutrition review". Which isn't a "new alternative" at all rather a utilization of existing ministries by encouraging them to examine the nutritional consequences of what they do. But this is generally ineffective because nutrition is invariably assigned a low priority since, after all, nutrition is not the main mission of such a ministry.

Hakin and Solimano (19) collaborate with Dr. Field and emphasize a need to change the research priorities of the nutrition community. Rather than search for new argument to justify expenditures on nutrition programs or new interventions to attack the problem, attention they say, should be turned to developing a better analysis of the problem in its social context. Hakin and Solimano criticize nutrition planners willingness to accept the hypothesis that increased nutritional status means increased national growth, without hard data to substantiate it. Furthermore, they feel that nutritionists have limited their focus to only standard intervention programs, e.g., nutrition education, fortification, institutional feeding, etc. And alternative measures have not been seriously examined, i.e., "the persistence of widespread malnutrition is largely a reflection of social and political organizations, institutional and economic arrangements, and choices of development strategies" (19).

Hakim and Solimano seem to advocate radical changes in the

socioeconomic and political arena, which may very well be the case, but these changes will not come easily nor quickly. Hopefully these critics will spur further research and better programs. However, for the present even with some shortcomings this approach represents an improvement over the impressionistic or unstructured nutrition planning that is generally prevalent.

COMPARATIVE ANALYSIS OF TWO APPROACHES
TO DEVELOPMENT PLANNING WITH RESPECT
TO NUTRITION PROBLEMS

This section examines a traditional approach to development planning with respect to nutrition problems and then the implications of introducing nutritional objectives into development planning. This chapter is taken from a study by Joy and Payne (20). The authors emphasize the central role of economic deprivation as the main cause of malnutrition. Hence the primary strategy for elimination of malnutrition is in improving the economic status of the poor.

This study draws from an actual field situation in Africa. It's an area quite small, about 3,000 square kilometres with a population of around 62,000 and a population growth rate of between 2-3 percent. Living standards are generally low and farming is mainly for subsistence though there is some production of coffee and vegetables for cash. Land holdings are generally small, in one location 75 percent of holdings were of 2 acres or less.

The prime objectives of development planning have been raising farm incomes and increasing employment. Development plans for the area have included a variety of programs for farming improvements. Some of these depend critically on there being an outside demand for the product and an access to a market.

One scheme was to encourage 500 farmers to plant one acre

of potatoes each under technical guidance and with the assistance of credit, seed, fertilizers, etc. However, only 25 percent of holdings exceed 2 acres and few farmers would be able to devote one acre to potatoes and still reserve sufficient land for food production. Also, only the biggest and richest farmers would be likely to contemplate the risk of loss implied in the very considerable outlay on production cost.

The weakness of such plans starts with their failure to define planning objectives in an operationally significant way. To aim "to increase farmers' incomes and to increase the level of economic activity and thus of employment", is not sufficient. There is a problem in this area of a large, and rapidly growing, number of families with neither land nor jobs to provide their subsistence. The above statement of objectives assumes that the way to provide for them is by encouraging existing farmers into commercial activity in which they will employ the unemployed. And in part it may be. But there is a severe contrast between promoting activities - private and public; farm and non-farm - which absorbs the landless in productive employment - and hoping that, by developing products and resources, this will happen automatically. In other words, a scheme to introduce improved dairy cattle might reduce employment if grazing displaced arable cultivation. Almost certainly, the milk that was produced would not go to the children of the poor who were malnourished. Yet such a scheme would be proposed on the grounds not only that it increased farmers' income but that it would improve nutrition. No doubt it would, but for the most

part the improvement would accrue to wealthier urban families who were not malnourished.

Planning must start from identification of the problems of the area. If landlessness and underemployment are a problem then an objective must be to secure productive employment for these people. If the number of such people is growing rapidly then policies must be sought which are capable of absorbing the growth in their numbers.

Thus a planning process which, in a rural area, started from a concern to improve welfare by reducing deprivation would result in development plans with strategies and measures different from the typical 'plan' consisting in the main of plan projects. Typically, these originate from technical officers with a concern to develop resources or production - in the belief that by so doing they will necessarily improve welfare.

Therefore, a new approach to rural development, elaborates more precisely the nature of development objectives, and accords nutrition a major status rather than the status of an optional extra. The essence of this approach is that it should recognize that the purpose of planning is to improve the pattern of consumption between people over time, and that planning for an increase in aggregate net production does not do this.

Joy and Payne conclude then that, for example in the Africa area study, measures should first be sought to raise the general economic status of the malnourished insofar as poverty is the cause of the condition. There are aspects of malnutrition which are less directly related to economic status - iodine deficiency

for example - which they did not discuss. They suggest it would be necessary to devise means of (a) settling landless on productive holdings, or (b) increasing the output of sub-marginal holdings or (c) creating productive public employment for the poorest in building social capital - perhaps in opening up new land, or (d) creating private wage employment for the poorest. There seemed to be considerable unharnessed resource potential. Whether appropriate forms of social organization and the necessary degree of political support could be found is a further issue.

The authors made the following observations. There are some among the poorest who cannot be reached by this method. Some percentage of families is likely to require welfare programs if they are to be assisted. The fact is that malnutrition now exists predominantly in areas with unutilized production potential. If the reduction of malnutrition, and associated symptoms of acute poverty, is assigned high priority the physical and economic potential exists in these areas to achieve this objective. The final observation to be made here is that the policy decisions which most critically affect the extent and nature of malnutrition are decisions which are currently regarded as being outside the scope of nutrition policy. But it's not to be concluded that the nutritionists should take over all planning. Rather, those concerned with applied nutrition programs cannot expect to have a major impact on the nutrition problem where this is governed by overall development strategies.

CONCLUSION

Malnutrition is a multifaceted global problem that is growing in ever increasing proportions. Past solutions have generally relied on increases in agricultural production or availability with the understanding that more food means less malnutrition. But the view that population is outgrowing the growth in food supplies, leads to the wrong conclusion that the solution to the problem lies in the limitation of population growth and promoting the growth of food supplies. In other words, it isn't simply a case of transferring food supplies to starving people. The issue is much more complex. Malnutrition is rooted in economics, sociology, psychology, physiology, and politics.

Furthermore, development planners have often held the philosophy that as the general economic status increases malnutrition decreases. But history is proving this "trickle down" theory to be ineffective in improving the nutritional status of the poor.

Nutrition problems call for different kinds of solutions. Solutions that recognize the causes of malnutrition and present a complimentary wide-angle approach to development.

This paper presents one approach to systematic nutrition planning. It consists of five steps: problem definition, establish plan objectives, comparison of alternative measures, selection of interventions and their integration into a unified

program, and evaluation.

Critics of this approach, e.g. Dr. Field (18), point out that this broad view to nutrition intervention is inherently ineffective because it doesn't coincide with the more narrow perspective held by governments in most low-income countries which have begun to plan nutrition oriented programs. He promotes another alternative - a strategy of "nutritional review".

"This strategy implicitly acknowledges the present futility of genuine multisectional planning for improved nutrition in most countries and seeks, as a more realistic alternative, to raise the salience of nutrition in the planning and program development already occurring in established sectors." Its task is to encourage separate ministries to examine the nutritional consequences of what they do.

Hakin and Solimano collaborate with Dr. Field and emphasize a need to change the research priorities of the nutrition community. Rather than search for new arguments to justify expenditures on nutrition programs or new interventions to attack the problem, attention, should be turned to developing a better analysis of the problem in its social context (19). But even the critics concede the value of this type of planning and that more thoughtful examination needs to be done (19). Furthermore, even with some shortcomings this approach represents an improvement over the impressionistic or unstructured nutrition planning that is generally prevalent.

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NUTRITION PLANNING AND POLICY MAKING
IN LESS DEVELOPED COUNTRIES

by

WENDELL ALLEN SMITH, JR.

B.S., California Polytechnic State University, 1973

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Manhattan, Kansas

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ABSTRACT

Malnutrition is a multifaceted global problem that is growing in ever increasing proportions. In Latin America alone malnutrition has been identified as the primary or an associated cause of 57 percent of all deaths of 1-4 year olds. Unlike famines which are dramatically visible, malnutrition is generally unseen. Nevertheless its day to day erosion of health takes a devastating toll on the well-being of mankind.

Malnutrition has traditionally been thought of as an indicator of underdevelopment. Promote development and malnutrition will go away. But today many developers are recognizing it as a barrier to development. Research studies relate malnutrition to low productivity, diminished human capacity, poor achievement, and increased morbidity and mortality. This has led economists to begin considering "human capital" in national development planning.

Past solutions have generally relied on increases in agricultural production or availability with the understanding that more food means less malnutrition. But it isn't simply a case of transferring food supplies to starving people. The issue is much more complex. Malnutrition is rooted in economics, sociology, psychology, physiology, and politics.

Furthermore, development planner have often held the philosophy that as the general economic status increases malnutrition decreases. But history is proving this "trickle

down" theory to be ineffective in improving the nutritional status of the poor.

Nutrition problems call for different kinds of solutions. Solutions that recognize the causes of malnutrition and present a complimentary wide-angle approach to development.

This paper presents a five step approach to systematic nutrition planning. The process begins by defining the problem. Who and where are the malnourished? What are the specific nutritional problems? The step collects data to provide a frame of reference from various angles. Step two establishes plan objectives or program goals. Is the program to be developmental or relief, to satisfy immediate needs or long-term improvements? Also will the program be within the resource limitations of the country? Step three compares alternative measures. Based on the previous two steps what type of intervention should be recommended. This profile or filter process provides an indication of the possible effectiveness, potential impact, and limitations of a given project. The purpose is to discern which program would likely achieve the desired target, within the desired time frame, and for the least cost. Step four is selecting the interventions and their integration into a unified program. At this point the opinions are placed before the decision makers, alternative objectives, alternative strategies, and the potential programs and consequences of alternative strategies. Evaluation is the final step. After decisions are made and put into operation, does the hypothesis work? Is it practical? How can it be improved?